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NORTH AMERICAN EARLY TERTIARY BRYOZOA

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PLATES



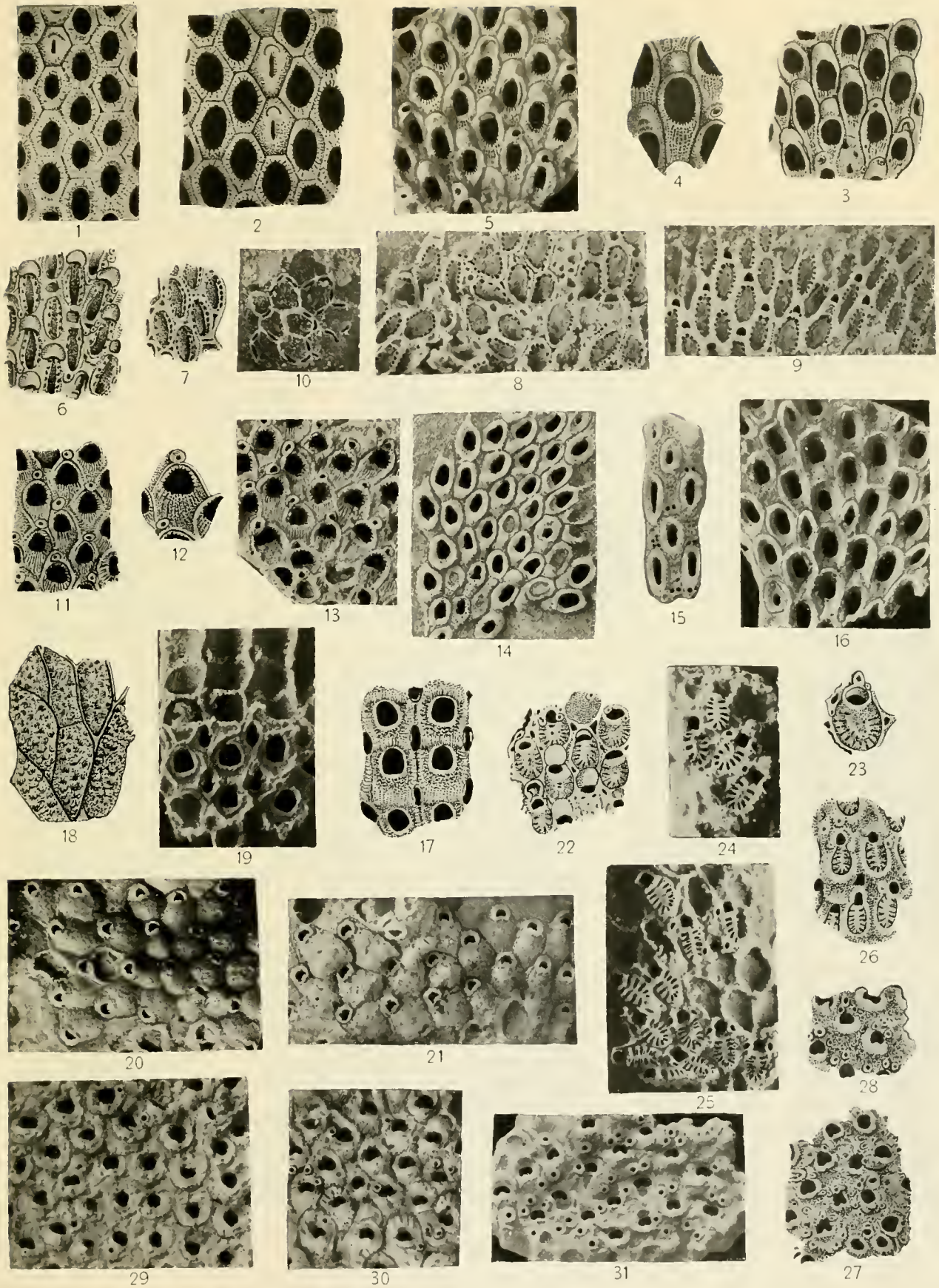
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DESCRIPTION OF PLATES.

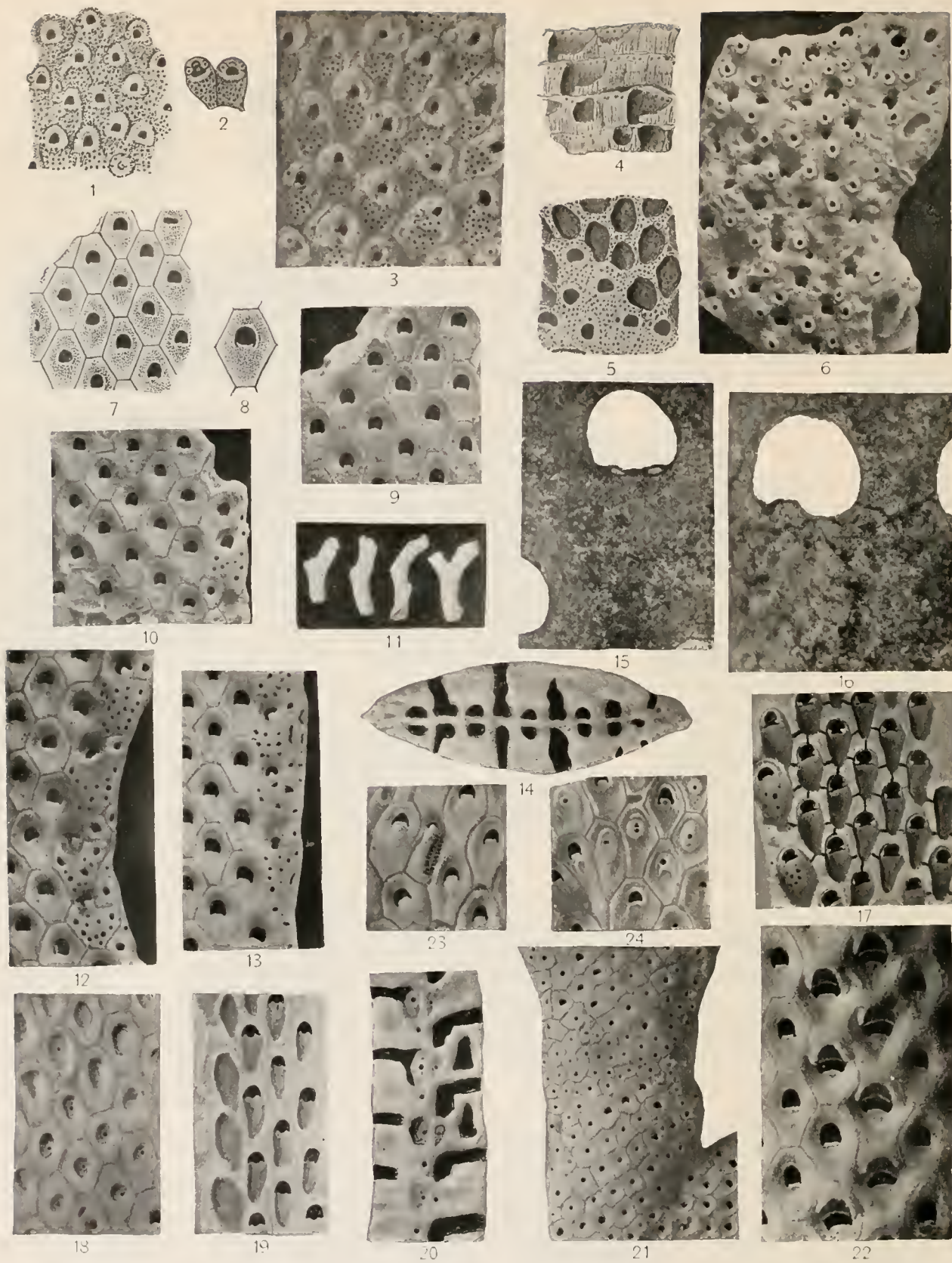
PLATE I.

(Figures 1-4, 6, 7, 11, 12, 17, 18, 22, 23, 26-28 are after Ulrich, 1901.)

- Figs. 1, 2. *Membraniporina rimulata* Ulrich, 1901 (p. 94).
 1. Surface of the incrusting zoarium, $\times 20$, of the variety with small zooecia.
 2. The type-specimen, $\times 20$. Several calcified zooecia are present.
 Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.
- Figs. 3-5. *Ellisia spiculosa* Ulrich, 1901 (p. 127).
 3. Surface of the incrusting type-specimen, $\times 20$, illustrating arrangement of zooecia and ovicells.
 4. Several zooecia of the same, $\times 30$.
 5. Photograph of the type $\times 20$, showing avicularia.
 Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.
- Figs. 6-10. *Ellisia angusta* Ulrich, 1901 (p. 127).
 6. Sketch of the incrusting zoarium, $\times 25$, with ovicells present.
 7. Several zooecia of another worn example, $\times 25$, without ovicells.
 8. Portion of a zoarium, $\times 20$, illustrating occurrence of the septulae.
 9. Another part of the same, $\times 20$, with several broken ovicells.
 10. Abraded surface, $\times 20$, showing a large distal and a pair of lateral diaphragms.
 Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.
 Cat. No. 63775, U.S.N.M.
- Figs. 11-13. *Amphiblestrum heteropora* Gabb and Horn, 1862 (p. 158).
 11. Surface of the Eocene form of the species, $\times 20$.
 12. A zooecium of the same, $\times 30$.
 13. Photograph of the Eocene type, $\times 20$.
 Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.
- FIG. 14. *Ramphonotus lucris*, new species (p. 164).
 The incrusting zoarium, $\times 20$, exhibiting ordinary, ovicelled, and calcified zooecia.
 Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.
 Cat. No. 63776, U.S.N.M.
- FIG. 15. *Stamnoecella cylindrica*, new species (p. 168).
 The free cylindrical type-specimen, $\times 20$. Two zooecia at the top are calcified.
 Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.
 Cat. No. 63777, U.S.N.M.
- FIG. 16. *Eurittina torta* Gabb and Horn, 1862 (p. 257).
 An Eocene example of this bilamellate species, $\times 20$.
 Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.
 Cat. No. 63778, U.S.N.M.
- Figs. 17-19. *Lunularia reversa* Ulrich, 1901 (p. 240).
 17. The celluliferous side of the type-specimen, $\times 25$.
 18. Inner side of the same example, $\times 20$.
 Lowest Eocene (Bryozoan bed at base of Aquia formation): Two miles below Potomac Creek, Maryland.
 19. Photograph, $\times 20$.
 Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.
 Cat. No. 63779, U.S.N.M.
- Figs. 20-21. *Macropora aquia*, new species (p. 277).
 20. The incrusting zoarium, $\times 20$, showing ancestrular region.
 21. The ordinary zooecia, $\times 20$, illustrating their hexagonal form. The lateral indentations of the aperture are visible.
 Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.
 Cat. No. 63780, U.S.N.M.
- Figs. 22-25. *Membraniporella modesta* Ulrich, 1901 (p. 285).
 22. The incrusting type-specimen, $\times 20$, with several ovicelled zooecia.
 23. An ordinary zooecium of the same, $\times 30$.
 24, 25. Two photographs of another specimen, $\times 20$. The costules often show a lumen line.
 Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.
 Cat. No. 63781, U.S.N.M.
- FIG. 26. *Membraniporella crassula* Ulrich, 1901 (p. 285).
 The incrusting type-specimen, $\times 20$.
 Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.
- Figs. 27-31. *Bathosella aspera* Ulrich, 1901 (p. 405).
 27, 28. Surface of the type-specimen, $\times 20$, and a few zooecia of another example.
 29. Photograph of another specimen, $\times 20$, showing one aspect of the species.
 30. Zooecia, $\times 20$, with the ovicell preserved on several of them.
 31. An example, $\times 20$, with the avicularia and micro well developed.
 Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.
 Cat. No. 63782, U.S.N.M.



EARLIEST EOCENE CHEILOSTOMATOUS BRYOZOA.



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PLATE 2.

FIGS. 1-3. *Cheilopora labiosa* Ulrich, 1901 (p. 526).

1, 2. Surface of the incrusting type-specimen, $\times 20$, and two zooecia more enlarged. (After Ulrich, 1901.)

3. Photograph of another example, $\times 20$.

Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.

Cat. No. 63783, U.S.N.M.

FIGS. 4, 5. *Meniscopora subplana* Ulrich, 1901 (p. 556).

4. Edge of a specimen, $\times 20$, showing four layers of zooecia.

5. Surface of the multilamellar, incrusting zoarium, $\times 20$. (Figs. 4, 5, after Ulrich, 1901.)

Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.

FIG. 6. *Acanthionella simplex*, new species (p. 617).

The free bilamellar type-specimen, $\times 20$. The large salient avicularium and the flat lyrula are quite visible.

Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.

Cat. No. 63784, U.S.N.M.

FIGS. 7-22. *Coscinopora digitata* Morton, 1834 (p. 275).

7, 8. Surface of the Eocene form of this species, $\times 20$, and a zooecium more highly magnified. (After Ulrich, 1901.)

9. Surface of a fragment, $\times 20$.

10. Another fragment, $\times 20$, with vibracular zooecia along the margin.

Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.

Cat. No. 63785, U.S.N.M.

11. Four fragments of the bifoliate zoarium, natural size. One preserves the expanded base.

12. Edge of a zoarium, $\times 20$, exhibiting both vibracular and hydrostatic zooecia.

13. Another specimen, $\times 20$, with vibracular zooecia only, along the margin.

14. Transverse section, $\times 20$.

15. Tangential thin section of a zooecium, $\times 100$, showing olocystal structure.

16. Tangential thin section of a vibracular zooecium, $\times 100$.

17. View of the interior of the zooecia, $\times 20$, showing one distal and two lateral septulae.

18. Interior of the hydrostatic zooecia, $\times 20$. The aperture is replaced by a small pore.

19. Interior of the ordinary zooecia, $\times 20$. A collar with two small lateral grooves is shown in the aperture.

20. Longitudinal section, $\times 20$, showing the lateral septulae.

21. Portion of a branch, $\times 20$, in which hydrostatic zooecia occupy the entire breadth.

22. A fragment, $\times 25$, with numerous oxicelled zooecia.

Cretaceous (Vincentown): Vincentown, New Jersey.

Cat. No. 63786, U.S.N.M.

FIGS. 23, 24. *Coscinopora clio* D'Orbigny, 1852.

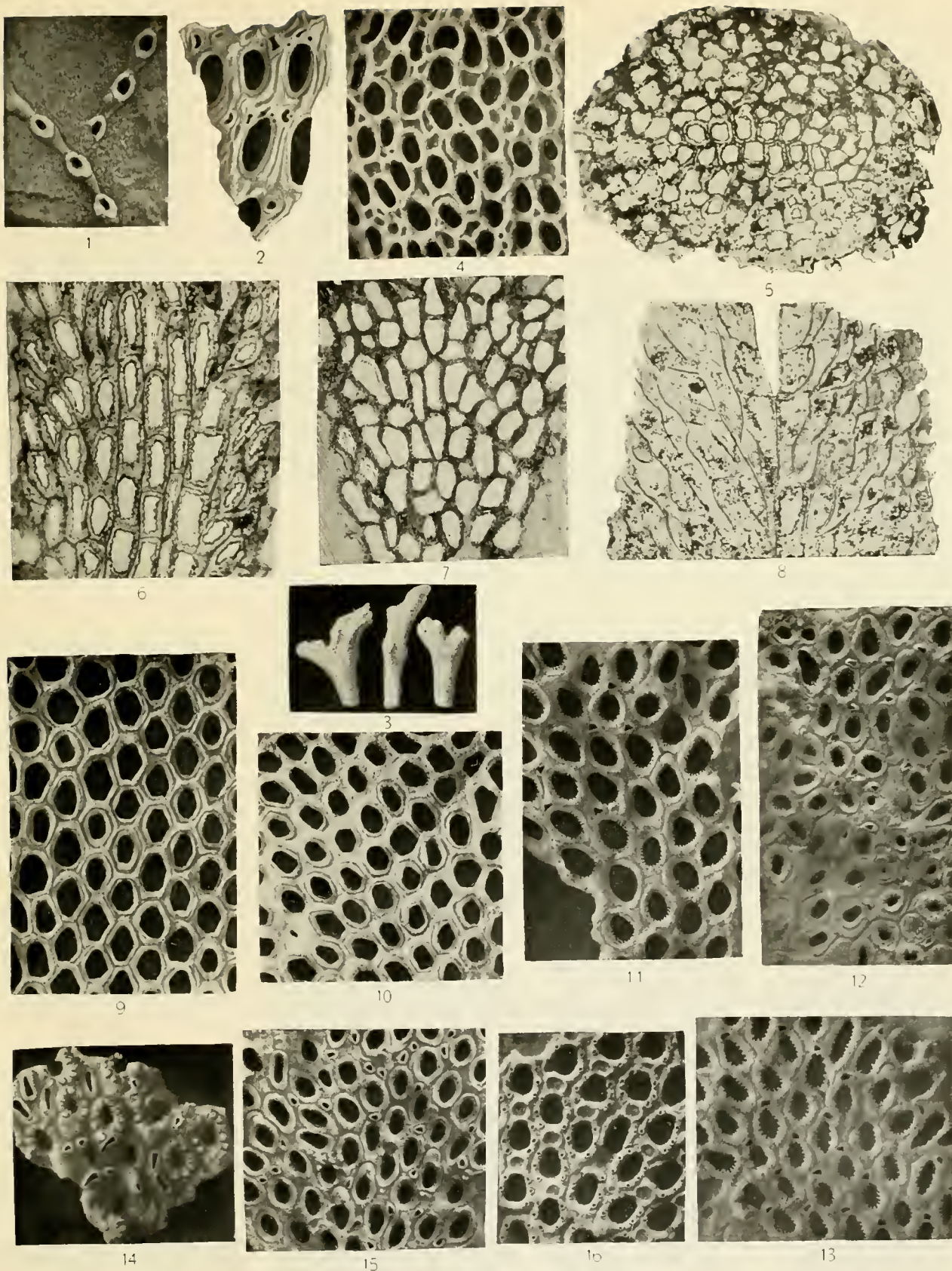
23. View of the surface, $\times 20$, showing a vibraculum with perforated lamina (=cribri form area).

24. Another photograph, $\times 20$, illustrating zooecia with calcified apertures.

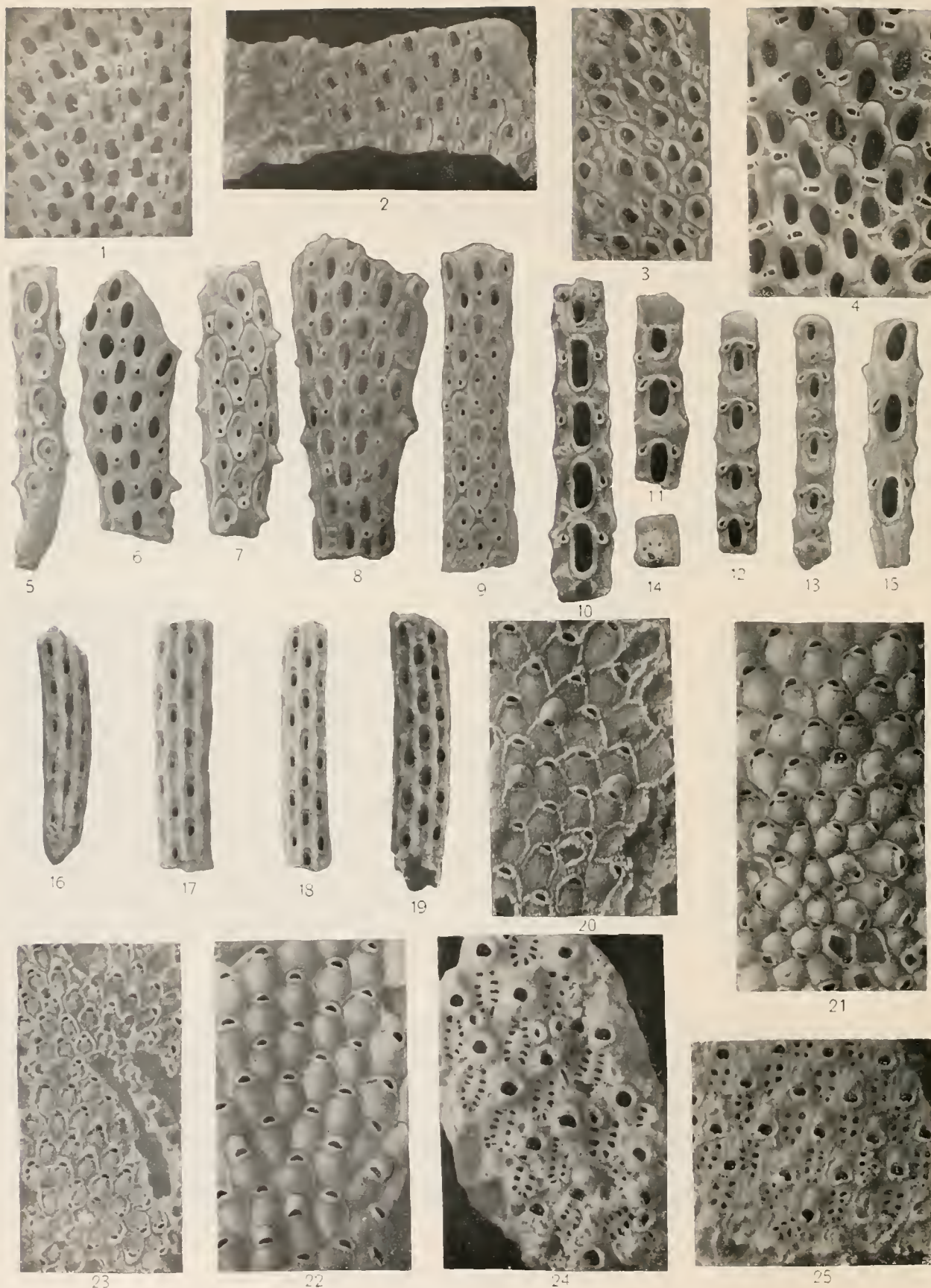
Cretaceous of France.

PLATE 3.

- FIG. 1. *Pyripora parvicella*, new species (p. 80).
The incrusting zoarium, $\times 20$, showing zooecial structure.
Midwayan (Clayton limestone) : Brundidge, Alabama.
Cat. No. 63787, U.S.N.M.
- FIG. 2. *Conopceum ornatum*, new species (p. 87).
Surface of the bilamellar type-specimen, $\times 20$. The ornamentation of the surface and the irregular interopesial cavities are evident.
Midwayan (Clayton limestone) : Mabelvale, near Little Rock, Arkansas.
Cat. No. 63788, U.S.N.M.
- FIGS. 3-8. *Conopceum denticornis*, new species (p. 87).
3. Three examples of the free, narrow, bilamellar, bifurcating zoarium, natural size.
4. Zoarial surface, $\times 20$, showing the distinct, irregular zooecia and the very irregular interopesial cavities.
5. Transversal thin section of a frond, $\times 20$.
6. Tangential thin section, $\times 20$, showing the opesial denticles.
7. Median thin section, $\times 20$, obtained by rubbing away both sides of the fronds.
8. Longitudinal thin section, $\times 20$, showing the structure of the bilamellar zoarium.
Midwayan (Clayton limestone) : Owl creek, $2\frac{3}{4}$ miles northeast of Ripley, Mississippi.
Cat. No. 63789, U.S.N.M.
- FIGS. 9, 10. *Membraniporina canalifera*, new species (p. 95).
9. Surface of the incrusting zoarium, $\times 20$, distinctly exhibiting the canal of the mural rim.
10. Another portion of the same zoarium, $\times 20$, with one calcified zooecium having a small linear orifice.
Midwayan (Clayton limestone) : 1 mile west of Fort Gaines, Georgia.
Cat. No. 63790, U.S.N.M.
- FIGS. 11-13. *Membranodocium transversum*, new species (p. 120).
11. The incrusting zoarium, $\times 20$, exhibiting the triangular avicularia, transversely arranged.
12. Another zoarium, $\times 20$, illustrating the aspect in the vicinity of the ancestrula where regenerated zooecia and calcified zooecia are developed.
13. A variation, $\times 20$, with the opesium strongly denticulated.
Midwayan (Clayton limestone) : 1 mile west of Fort Gaines, Georgia.
Cat. No. 63791, U.S.N.M.
- FIG. 14. *Callopora ? tuberosa*, new species (p. 155).
The free unilamellar type-specimen, $\times 20$.
Midwayan (Clayton limestone) : 1 mile west of Fort Gaines, Georgia.
Cat. No. 63792, U.S.N.M.
- FIG. 15. *Callopora dumerilii* Audouin, 1826 (p. 148).
An Eocene example of this widely distributed species, $\times 20$.
Midwayan (Clayton limestone) : Brundidge, Alabama.
Cat. No. 63793, U.S.N.M.
- FIG. 16. *Callopora scirspinosa*, new species (p. 147).
The incrusting type-specimen, $\times 20$, with ovicells and the characteristic six spines well developed.
Midwayan (Clayton limestone) : Brundidge, Alabama.
Cat. No. 63794, U.S.N.M.



MIDWAYAN CHEILOSTOMATOUS BRYOZOA.



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PLATE 4.

- FIG. 1. *Callipora stipata*, new species (p. 153).
Surface of the incrusting zoarium, $\times 20$, illustrating especially the numerous large interzooecial avicularia.
Midwayan (Clayton limestone): Brundidge, Alabama.
Cat. No. 63795, U.S.N.M.
- FIGS. 2, 3. *Amphiblestrum productum*, new species (p. 159).
2. The incrusting zoarium, $\times 20$, showing length of zooecia.
Midwayan (Clayton limestone): 1 mile west of Fort Gaines, Georgia.
Cat. No. 63796, U.S.N.M.
3. A zoarium, $\times 20$, exhibiting a slightly different aspect of the zooecia.
Midwayan (Clayton limestone): Luverne, Crenshaw County, Alabama.
Cat. No. 63797, U.S.N.M.
- FIG. 4. *Ramphonotus sloani*, new species (p. 164).
Surface of the incrusting zoarium, $\times 20$, with both ovicelled and nonovicelled zooecia.
Midwayan (Clayton limestone): Brundidge, Alabama.
Cat. No. 63798, U.S.N.M.
- FIGS. 5-9. *Stamencella midwayana*, new species (p. 169).
5. The lower portion of the free, bilamellar, claviform zoarium, $\times 20$, with radicular zooecia.
6. The upper, broader portion of the zoarium, $\times 20$.
7. A fragment, $\times 20$, with radicular zooecia and prominent avicularia.
8. A broad zoarium, $\times 20$, exhibiting the normal appearance of the zooecia and avicularia.
9. An example, $\times 20$, with strongly developed radicular zooecia.
Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.
Cat. No. 63799, U.S.N.M.
- FIGS. 10-15. *Nellia midwayana*, new species (p. 197).
10-11. Three fragments of the articulated zoarium, $\times 20$, showing two aspects of the broad zooecia.
12. An example, $\times 20$, illustrating the narrow zooecia.
13. A fragment, $\times 20$, with a radicular pore at the base of certain opesia.
14. End view of a segment, $\times 20$, exhibiting its quadrangular form and the basal pore.
Midwayan (Clayton limestone): Luverne, Crenshaw County, Alabama.
Cat. No. 63800, U.S.N.M.
15. Another fragment, $\times 25$.
Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.
Cat. No. 63801, U.S.N.M.
- FIGS. 16-19. *Smittipora midwayana*, new species (p. 225).
16. A fragment, $\times 20$, showing the base of the cylindrical segment.
17. Portion of a segment, $\times 20$, illustrating the usual aspect of the zooecia.
18. An example, $\times 20$. The zooecium in the center with small narrow opesium is probably an onychocellarium.
19. A fragment, $\times 20$, with well developed mural rims.
Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.
Cat. No. 63802, U.S.N.M.
- FIGS. 20-22. *Micropora coriacea* Esper, 1791 (p. 235).
20. The incrusting zoarium, $\times 20$, with three ovicelled zooecia. The opesiules are closed by fossilization.
Upper Jacksonian (Ocala limestone): $1\frac{1}{2}$ miles above Bainbridge, Georgia.
Cat. No. 63803, U.S.N.M.
21. Portion of a zoarium, $\times 20$, showing region about the ancestrula. The opesiules are quite visible.
22. The normal aspect of the zooecia, $\times 20$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63804, U.S.N.M.
- FIG. 23. *Micropora minuticella*, new species (p. 237).
The incrusting type-specimen, $\times 20$, exhibiting the extreme minuteness of the zooecia.
Midwayan (Clayton limestone): 1 mile west of Fort Gaines, Georgia.
Cat. No. 63805, U.S.N.M.
- FIGS. 24, 25. *Membraniporella crassicollis*, new species (p. 286).
24. Fragment of the free, bilamellar zoarium, $\times 20$. The thick peristome is a prominent feature.
25. An example, $\times 20$, bearing ovicelled zooecia.
Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.
Cat. No. 63806, U.S.N.M.

PLATE 5.

Figs. 1-7. *Eurilina tecta*, new species (p. 258).

1. Surface of the free bilamellar zoarium, $\times 20$. The normal zooecia with lateral grooves are seen in the upper third of the photograph, but the zooecia of the supplementary layer in the lower two-thirds, appear quite different.
 2. Portion of a zoarium, $\times 20$, with two ovicelled zooecia and several avicularia. The avicularia of the primoserial zooecia are rounded and have a marked distal convexity.
 3. Tangential thin section, $\times 20$, showing olocystal elements of cryptocyst and mural rim.
 4. Tangential thin section, $\times 100$, illustrating olocystal structure of the bottom of the zooecium.
 5. Interior of the zooecial frontal, $\times 20$, showing the structure of the avicularium and the thickening of the lower opesia border.
 - 6, 7. Two interiors, $\times 20$, illustrating the similarity of shape of both primoserial and ordinary zooecia and the absence of any trace of the grooves of the cryptocyst.
- Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.
Cat. No. 63807, U.S.N.M.

Figs. 8-10. *Membraniporella planula*, new species (p. 286).

8. Zooecia of the free bilamellar zoarium, $\times 20$, exhibiting the flat costules and the wide intervening slits.
 9. Another zoarium, $\times 20$, with slightly larger zooecia. The deep furrow separating the zooecia is quite evident.
- Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.
Cat. No. 63808, U.S.N.M.
10. Interior of the zooecia, $\times 20$.
- Midwayan (Clayton limestone): Laverne, Crenshaw County, Alabama.
Cat. No. 63809, U.S.N.M.

FIG. 11. *Cribrilina laticostulata*, new species (p. 292).

- Portion of the incrusting zoarium, $\times 20$.
Midwayan (Clayton limestone): Brundidge, Alabama.
Cat. No. 63810, U.S.N.M.

Figs. 12-14. *Cribrilina verrucosa*, new species (p. 291).

12. Surface of the incrusting zoarium, $\times 20$, with the lacunae little visible.
 13. Another zoarium, $\times 20$, in which the lacunae are well developed.
- Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.
Cat. No. 63811, U.S.N.M.
14. A zoarium, $\times 20$, with the lumen line shown.
- Midwayan (Clayton limestone): 1 mile west of Fort Gaines, Georgia.
Cat. No. 63812, U.S.N.M.

Figs. 15-17. *Cribrilina rathbunae*, new species (p. 293).

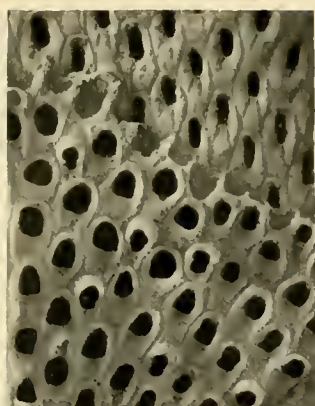
- 15, 16. Portion of two zoaria, $\times 20$. The differences in the lacunae are due to fossilization.
 17. A zoarium, $\times 20$, with several zooecia preserving the costules quite clearly.
- Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.
Cat. No. 63813, U.S.N.M.

Figs. 18-20. *Gephyrotes saillans*, new species (p. 301).

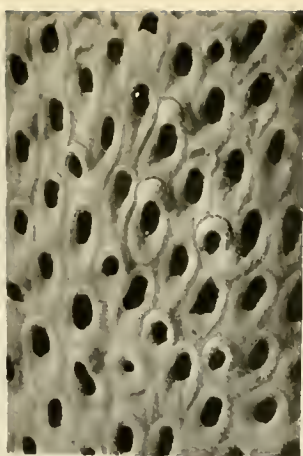
- 18, 19. Two fragments of the creeping zoarium, $\times 20$. The prominent peristome and the large avicularia are characteristic.
 20. A specimen, $\times 20$, with the spiramen developed on most of the zooecia.
- Midwayan (Clayton limestone): Laverne, Crenshaw County, Alabama.
Cat. No. 63814, U.S.N.M.

FIG. 21. *Puellina*, species undetermined (p. 295).

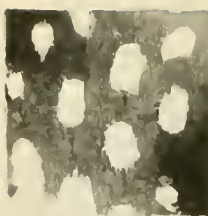
- Surface of the only zoarium noted, $\times 20$.
Midwayan (Clayton limestone): Laverne, Crenshaw County, Alabama.
Cat. No. 63815, U.S.N.M.



1



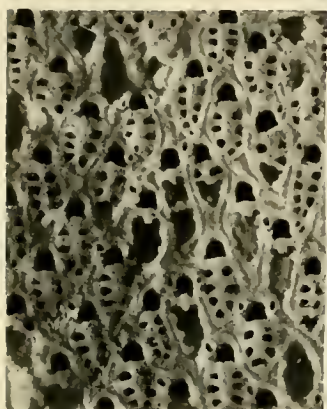
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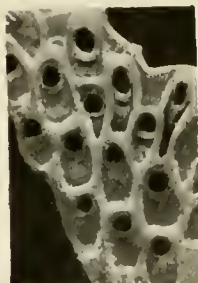
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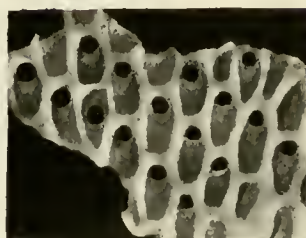
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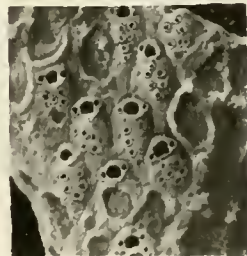
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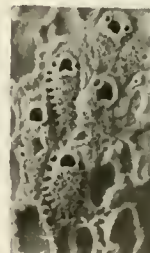
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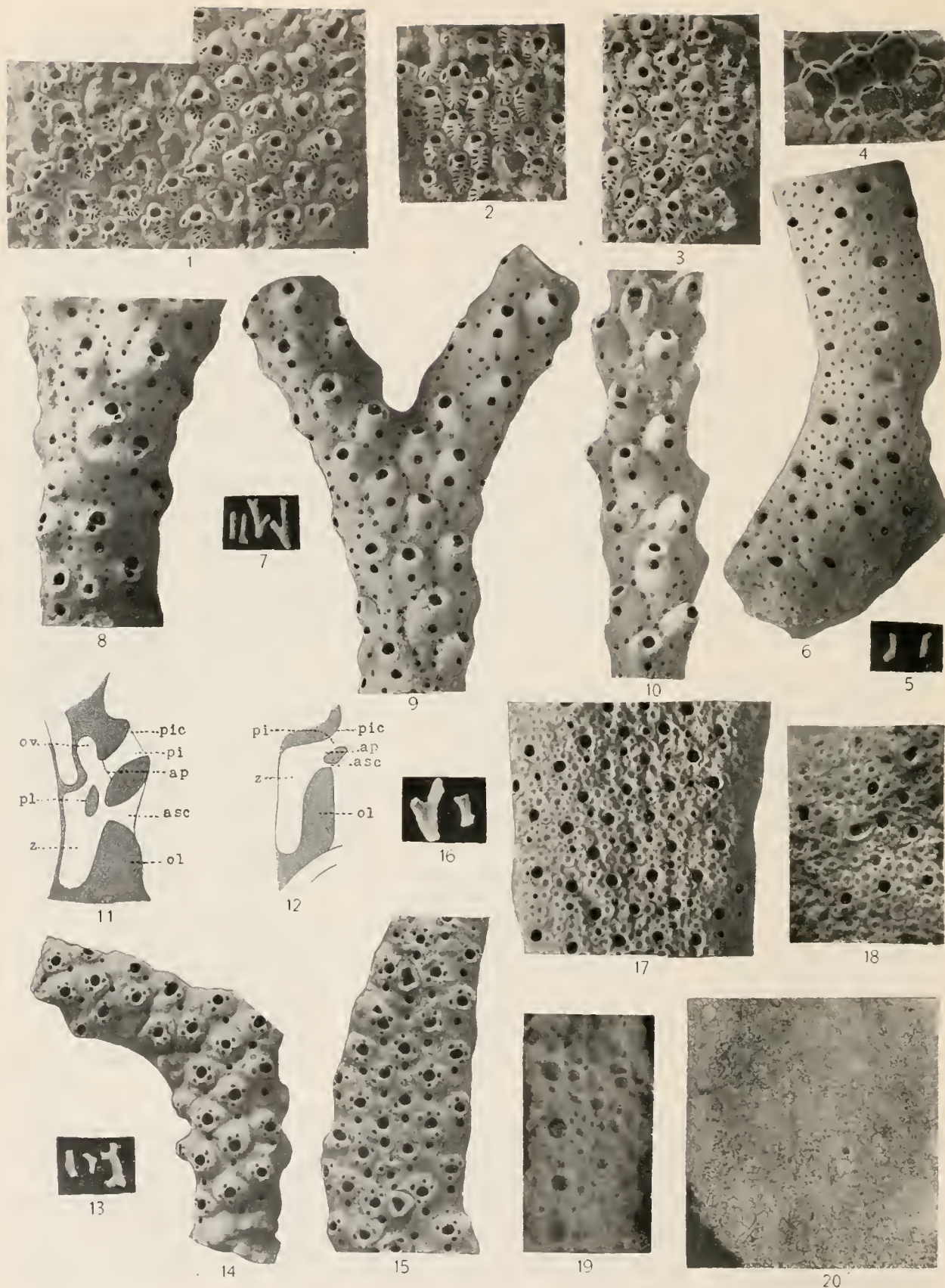
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17



21



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PLATE 6.

FIGS. 1-4. *Gephyrotes lorigatum*, new species (p. 301).

1. The incrusting zoarium, $\times 20$, presenting the usual aspect of the species.
2. Another zoarium, $\times 20$, in which the gymnocyst is quite small.
3. A third specimen, $\times 20$, with the gymnocyst wanting. The spiramen is well shown on this example.
4. The abraded surface of several zooecia, $\times 20$, showing the pair of lateral diatellae and the single distal one.

Midwayan (Clayton limestone): 1 mile west of Fort Gaines, Georgia.

Cat. No. 63816, U.S.N.M.

FIGS. 5-6. *Acropora trita*, new species (p. 318).

5. Two fragments, natural size, of the free, cylindrical zoarium.
6. Surface, $\times 20$, showing the indistinct zooecia, the ascopore and the tubules of the tremocyst forming the frontal.

Midwayan (Clayton limestone): 1 mile west of Fort Gaines, Georgia.

Cat. No. 63817, U.S.N.M.

FIGS. 7-12. *Gastropella ventricosa* Camu and Bassler, 1917 (p. 320).

7. A group of fragments of the free cylindrical zoarium, natural size.
8. A fragment, $\times 20$, showing a small peristomial avicularium.
9. A bifurcated zoarium, $\times 20$.
10. An example, $\times 20$, in which the large swollen zooecia, large ascopore and the lateral areolae are well shown.
- 11, 12. Longitudinal section through a zooecium without oviceil, $\times 32$, (fig. 12) and through one with oviceil (fig. 11).

ap, apertura; *asc*, ascopore; *ol*, olocyst; *ov*, oviceil; *pi*, peristome; *pl*, support; *pic*, peristomice; *z*, zooecium.

Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.

Cat. No. 62589, U.S.N.M.

FIGS. 13-15. *Pachytheca stipata*, new species (p. 322).

13. Three fragments of the free cylindrical zoarium, natural size.
14. A bifurcated fragment, $\times 20$, showing the prominent peristome with avicularia, the smooth frontal and the deeply imbedded ascopore.
15. A broader zoarium, $\times 20$, exhibiting several large triangular avicularian zooecia.

Midwayan (Clayton limestone): Luverne, Crenshaw County, Alabama.

Cat. No. 63819, U.S.N.M.

FIGS. 16-20. *Beisselina forata*, new species (p. 322).

16. Two examples of the free, bifoliate zoarium, natural size.
17. Surface, $\times 20$, illustrating the aspect of the large frontal pores and the ascopore.
18. Another surface, $\times 20$, with two avicularian zooecia.
19. Interior of the zooecia, $\times 20$.
20. Tangential thin section, $\times 100$, passing through the olocyst and showing quinemx arrangement of the elements.

Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.

Cat. No. 63820, U.S.N.M.

PLATE 7.

FIGS. 1-13. *Beisselina midwayana*, new species (p. 324).

1. Two fragments of the narrow bifoliate zoarium, natural size.
2. Surface of an example, $\times 20$, with abundant frontal pores.
3. Another specimen, $\times 20$, with the frontal pores absent and with several zooecia exhibiting the ovicell cavities.
4. A fragment, $\times 20$, with frontal pores rarely developed. The ascopore is plainly visible.
5. View of the interior of the zooecia, $\times 20$. The zooecia and the large tubules are visible.
6. Surface of a fragment, $\times 20$, with a single avicularian zooecium.
7. Transversal section, $\times 20$, showing the thin lateral walls intimately joined.
8. Tangential thin section, $\times 20$.
9. Transversal thin section, $\times 20$, illustrating the two lamellae with dense, crowded olocystal elements arranged transversally.
10. A bifurcated zoarium, $\times 20$, exhibiting several avicularian zooecia.
11. Tangential thin section, $\times 100$, cutting the basal olocyst and showing the dense structure.
12. Schematic drawing of the longitudinal section, $\times 20$. *ap*, apertura; *asc*, ascopore; *av*, avicularia; *ol*, olocyst; *pl*, peristome; *pic*, peristomice; *z*, zooecium.
13. A zoarium, $\times 20$, with several avicularian zooecia.
Midwayan (Clayton limestone); Mabelvale, near Little Rock, Arkansas.
Cat. No. 63821, U.S.N.M.

FIG. 14. *Beisselina labiata* Gabb and Horn, 1862.

- An example of this species, $\times 20$, introduced for comparison. The large salient avicularia are characteristic.
Upper Cretaceous (Vincentown); Vincentown, New Jersey.
Cat. No. 63822, U.S.N.M.

FIGS. 15, 16. *Hippothoa ? conjuncta*, new species (p. 327).

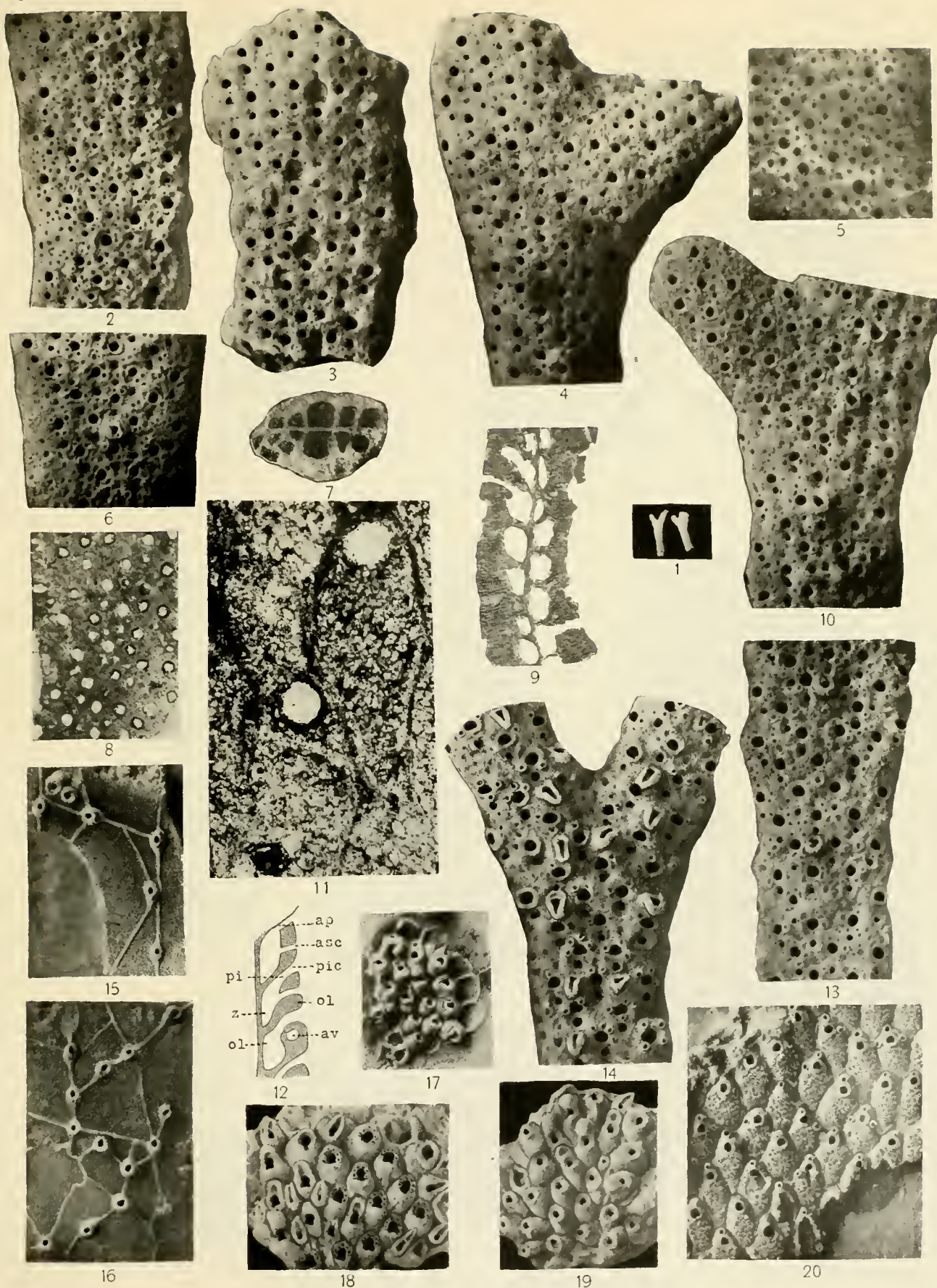
15. The incrusting zoarium, $\times 20$, having zooecia with long caudal portions.
16. Another zoarium, $\times 20$, in which the caudal portions are much shorter.
Midwayan (Clayton limestone); Luverne, Crenshaw County, Alabama.
Cat. No. 63823, U.S.N.M.

FIGS. 17-19. *Hippoporina midwayana*, new species (p. 375).

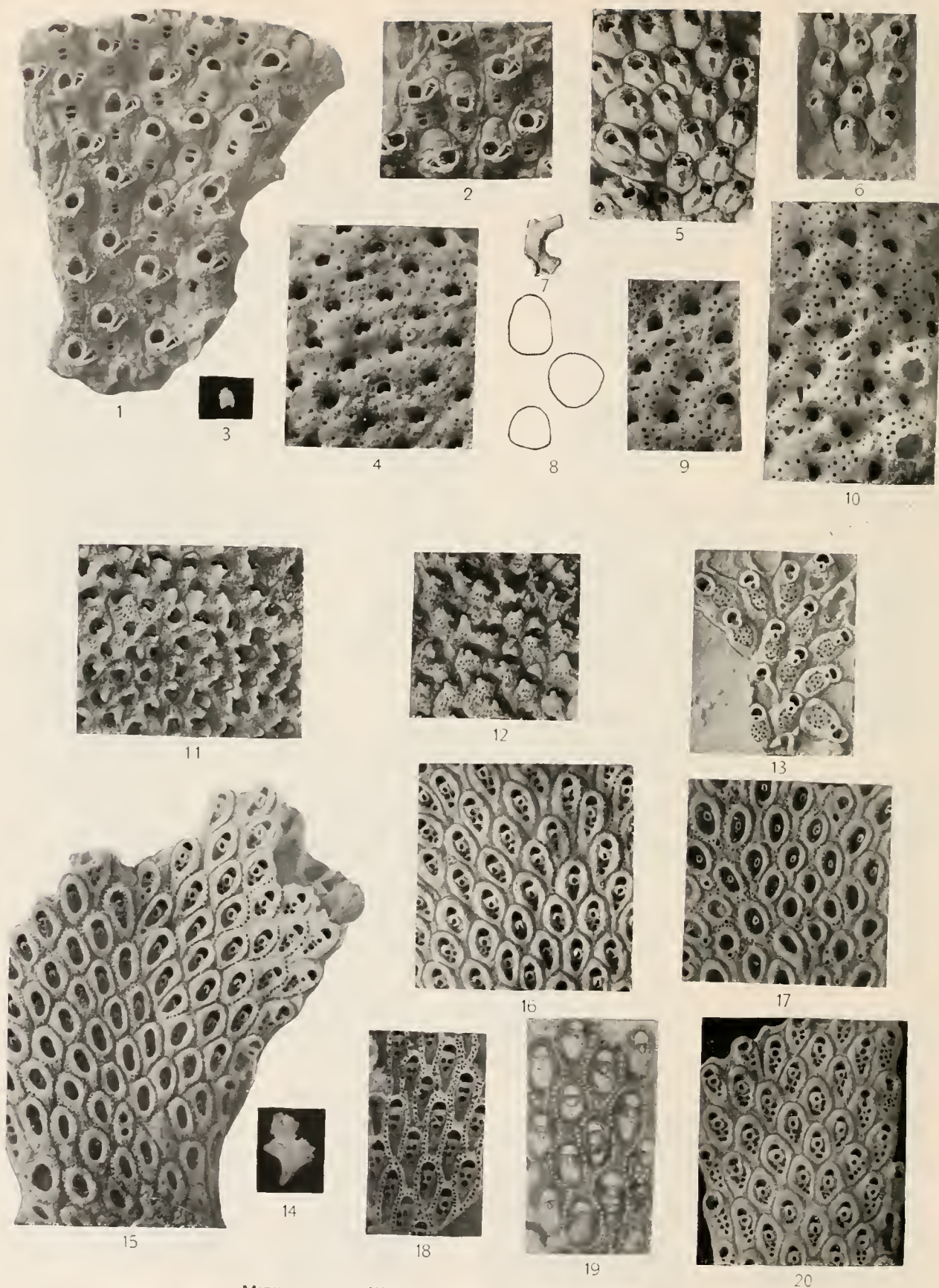
17. Small colony, $\times 20$, showing absence of dorsal diatellae and olocyst on some zooecia.
18. A normal example of the incrusting zoarium, $\times 20$. The shape of the aperture, the spines and the avicularian zooecia are well shown.
19. A young zoarium, $\times 20$, with several ovicelled zooecia.
Midwayan (Clayton limestone); 1 mile west of Fort Gaines, Georgia.
Cat. No. 63824, U.S.N.M.

FIG. 20. *Anarthropora verrucosa*, new species (p. 430).

- The type-specimen of this incrusting species, $\times 20$.
Midwayan (Clayton limestone); 1 mile west of Fort Gaines, Georgia.
Cat. No. 63825, U.S.N.M.



MIDWAYAN CHEILOSTOMATOUS BRYOZOA.



MIDWAYAN AND WILCOXIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 8.

FIGS. 1, 2. *Galcopsis ? convexus*, new species (p. 511).

1. Fragment of the bifoliate zoarium. $\times 20$, illustrating the occurrence of the ascopore and avicularia.
2. Another specimen, $\times 20$, with ovicelled zooecia.
Midwayan (Clayton limestone): 1 mile west of Fort Gaines, Georgia.
Cat. No. 63826, U.S.N.M.

FIGS. 3, 4. *Bathosella undata*, new species (p. 406).

3. Fragment of the free bilamellar zoarium, natural size.
4. Surface of the type, $\times 20$. The deeply embedded ovicell (broken) is visible on several zooecia.
Midwayan (Clayton limestone): 1 mile west of Fort Gaines, Georgia.
Cat. No. 63827, U.S.N.M.

FIGS. 5, 6. *Cystisella midwayanica* Canu and Bassler, 1917 (p. 479).

5. The incrusting zoarium. $\times 20$. The zooecial spines and the frontal avicularian chambers (broken) are visible.
6. A small cluster of zooecia, $\times 20$, some of which preserve the avicularia unbroken.
Midwayan (Clayton limestone): Luverne, Crenshaw County, Alabama.
Cat. No. 62606, U.S.N.M.

FIGS. 7-10. *Bathosella cingcrans*, new species (p. 405).

7. The hollow cylindrical zoarium, natural size.
8. Sketches of the aperture, $\times 72$, showing variations in shape.
9. Another view of the type-specimen, $\times 20$, showing the zooecia at the base of a funnel like structure.
10. Surface, $\times 20$, illustrating the avicularia, areolae, and the large abnormal zooecia.
Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.
Cat. No. 63828, U.S.N.M.

FIGS. 11, 12. *Rhynchostomella simplex*, new species (p. 477).

11. The incrusting zoarium, $\times 20$, showing region around ancestrula.
12. Another zoarium, $\times 20$, with ovicells developed on some of the zooecia. The salient avicularium and the granulate pleurocyst are visible.
Wilcoxian (Bashi formation): Woods Bluff, Alabama.
Cat. No. 63829, U.S.N.M.

FIG. 13. *Adeonellopsis porosa*, new species (p. 565).

- Photograph of the incrusting type-specimen. $\times 20$, with the large frontal pierced by a dozen pores.
Wilcoxian (Bashi formation): Woods Bluff, Alabama.
Cat. No. 63818, U.S.N.M.

FIGS. 14-20. *Adeonellopsis magniporosa*, new species (p. 565).

14. The bilamellar zoarium, natural size.
15. Zoarium, $\times 20$, showing old zooecia. The aperture and pointed, triangular avicularium only are visible in the total area of such zooecia.
16. Another surface, $\times 20$, with zooecia exhibiting the deep cribriform area.
17. Old zooecia, $\times 20$, with adventitious round avicularium below the total area.
18. Interior of the zooecia, $\times 20$.
19. Tangential thin section, $\times 25$, passing through the zooecial frontal.
20. Surface of a frond, $\times 20$, with deep cribriform area containing five to seven pores.
Wilcoxian (Bashi formation): Woods Bluff, Alabama.
Cat. No. 63830, U.S.N.M.

PLATE 9.

FIGS. 1-7. *Conopeum wilcoxianicum*, new species (p. 88).

1. Natural size view of a bushy bilamellate zoarium.
2. Surface of a zoarium with young zooecia, $\times 20$. Several regenerated zooecia with a thin double mural rim are visible.
3. Portion of a zoarium with narrow zooecia, $\times 20$.
4. Another zoarium, $\times 20$, with broad zooecia, distinct interopesia, and two distal impressions shown in some of the opesia.
5. An example, $\times 20$, in which the mural rims are granulated. Regenerated zooecia are also developed.
6. View, $\times 20$, showing ancestrular region.
7. Surface of a bilamellar zoarium, $\times 20$. The distal impressions are shown in several opesia.

Wilcoxian (Bashi formation): Woods Bluff, Alabama.

Cat. No. 63831, U.S.N.M.

FIGS. 8, 9. *Conopeum similior*, new species (p. 88).

8. The incrusting zoarium, $\times 20$. Calcified zooecia with a linear orifice and a semi-lunar distal furrow are shown.
9. Another zoarium, $\times 20$, exhibiting the furrow separating the zooecia and the finely crenulated opesium.

Wilcoxian (Bashi formation): Woods Bluff, Alabama.

Cat. No. 63832, U.S.N.M.

FIG. 10. *Alderina nodulosa*, new species (p. 143).

Surface of the free unilamellar zoarium, $\times 20$. The two nodular projections and the arrangement of the septulae are quite visible.

Wilcoxian (Bashi formation): Woods Bluff, Alabama.

Cat. No. 63833, U.S.N.M.

FIGS. 11-12. *Lunularia orata*, new species (p. 241).

11. Celluliferous side of a zoarium, $\times 20$, exhibiting the rows of hydrostatic and of polypidian zooecia. Ovicells are developed on two of the zooecia.
12. Inner side of a zoarium, $\times 20$, showing the many tuberosities of this surface.

Wilcoxian (Bashi formation): Woods Bluff, Alabama.

Cat. No. 63834, U.S.N.M.

FIGS. 13-16. *Aimulosia clavula*, new species (p. 429).

13. The incrusting zoarium, $\times 20$, in which the areolae are larger than usual.
14. Zooecia, $\times 20$, with the ovicell well developed and the frontal avicularium farther removed from the aperture.
15. Another example, $\times 20$, with the pleurocyst developed.
16. An example, $\times 20$, in which the ovicell is broader than the zooecium.

Wilcoxian (Bashi formation): Woods Bluff, Alabama.

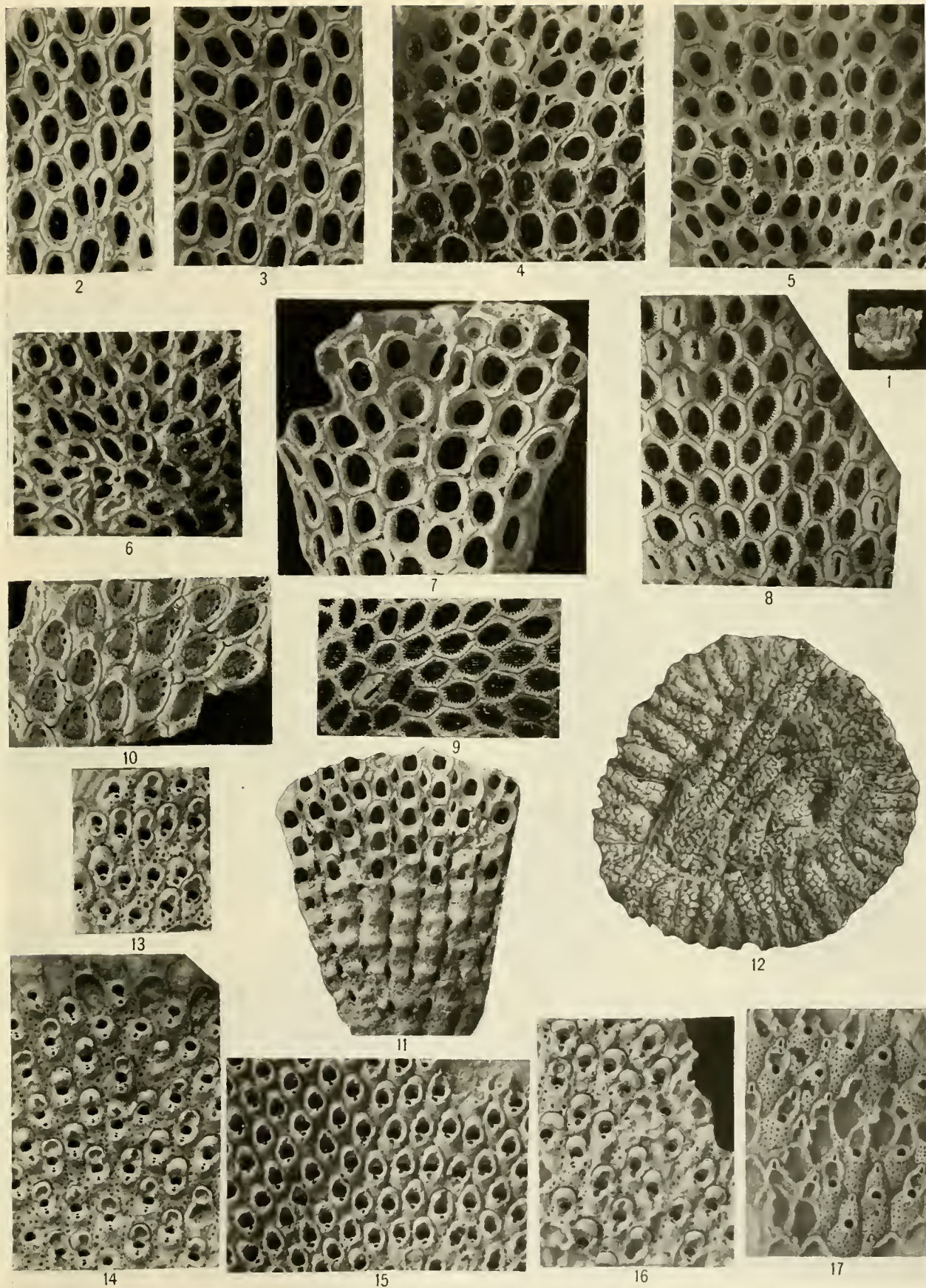
Cat. No. 63835, U.S.N.M.

FIG. 17. *Trypostega elongata*, new species (p. 328).

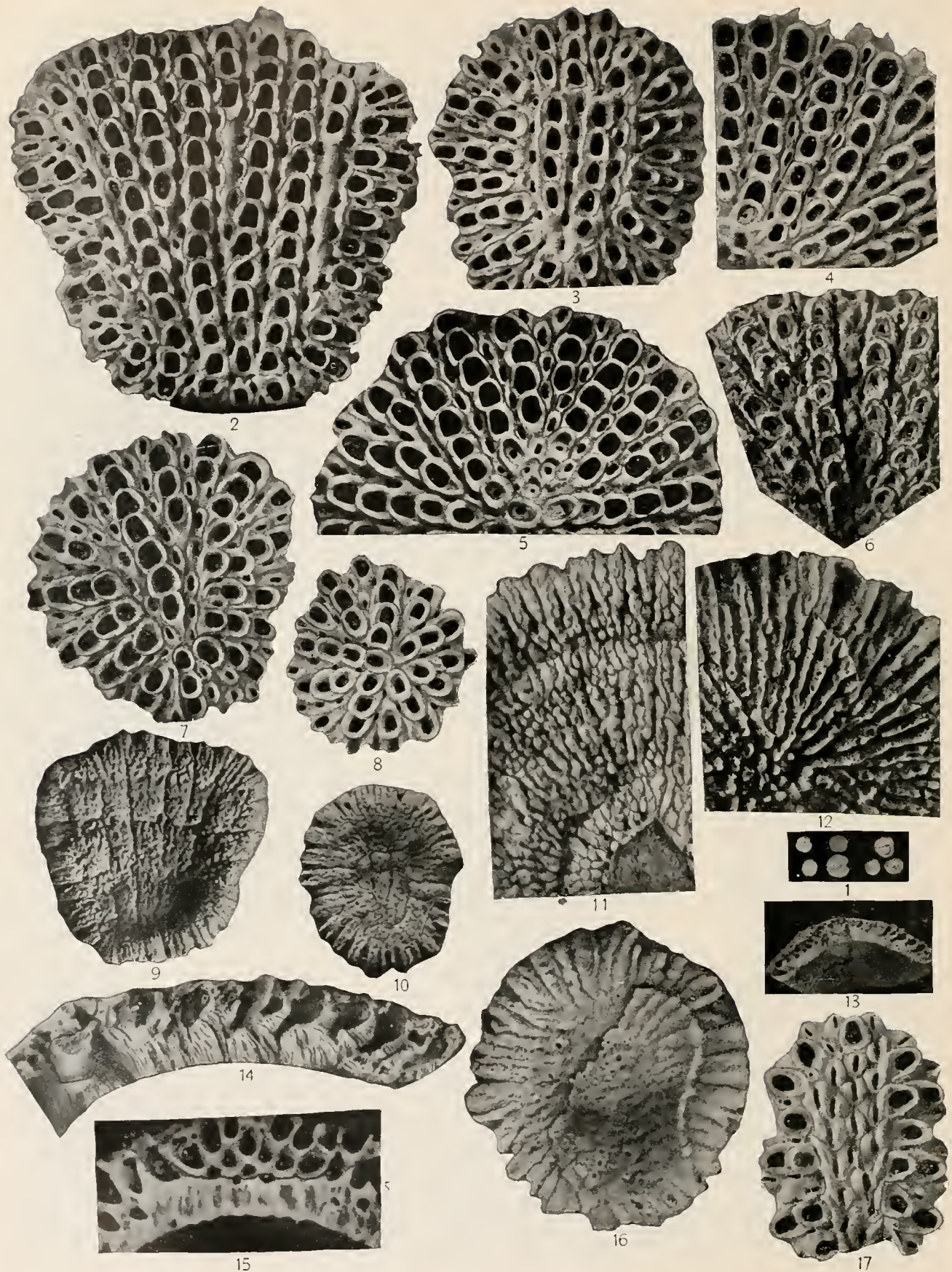
The incrusting zoarium, $\times 20$.

Wilcoxian (Bashi formation): Woods Bluff, Alabama.

Cat. No. 63836, U.S.N.M.



WILCOXIAN CHEILOSTOMATOUS BRYOZOA.



CLAIBORNIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 10.

FIGS. 1-17. *Trochopora bouci* Lea, 1833 (p. 103).

1. A group of zoaria, natural size.
2. A large flabelliform zoarium of normal zooecia, $\times 20$ (forma *ductosi*).
3. A zoarium originally flabelliform, becoming discoidal by the proliferation of the lateral rows, $\times 20$. The ancestrula engenders a flabelliform central portion.
4. Portion of a specimen, $\times 20$, in which the radial arrangement of the zooecia is more developed.
5. Half of a zoarium, $\times 20$. The ancestrula is immersed. Both radicular and normal zooecia are developed. The ancestrula gives rise to radicular zooecia (forma *almina*).
6. Portion of a zoarium, $\times 20$, exhibiting radicular zooecia only.
7. A small zoarium, $\times 20$, composed of normal zooecia.
8. A small discoidal example, $\times 20$. The ancestrula is visible and gives rise to normal zooecia only.
9. The inner concave face of a flabelliform zoarium, $\times 10$.
10. The inner face of a smaller specimen, $\times 10$, still showing the flabelliform arrangement at the center.
11. Inner side, $\times 20$, showing growth on a quartz fragment.
12. Portion of inner face of zoarium, $\times 20$, showing the superposition of the disks.
13. Broken edge of a zoarium, $\times 5$.
14. Portion of the same specimen, $\times 20$, showing fibrous structure of zoarium and growth on a grain of sand.
15. Vertical fracture, $\times 20$.
16. Inner face of a discoidal zoarium, $\times 20$, illustrating the superposed zooecial disks.
17. A zoarium, $\times 20$. The flabelliform portion is formed of vibracula.
Claibornian (Gosport sand): Claiborne, Alabama.
Cat. No. 63837, U.S.N.M.

PLATE 11.

FIGS. 1-6. *Trochopora truncata* DeGregoria, 1890 (p. 104).

1. Four zoaria, natural size.
2. Convex celluliferous side of an example, $\times 20$, showing growth on a quartz grain.
- 3, 4. Views of the inner side of two zoaria, $\times 20$. The radial rows are flat and smooth at the center and porous toward the circumference.
5. A flat inner side of a zoarium, $\times 20$, in which the pores are well developed.
6. Inner side, $\times 20$, showing the disks of which the zoarium is composed.

Claibornian (Gosport sand); Claiborne, Alabama.

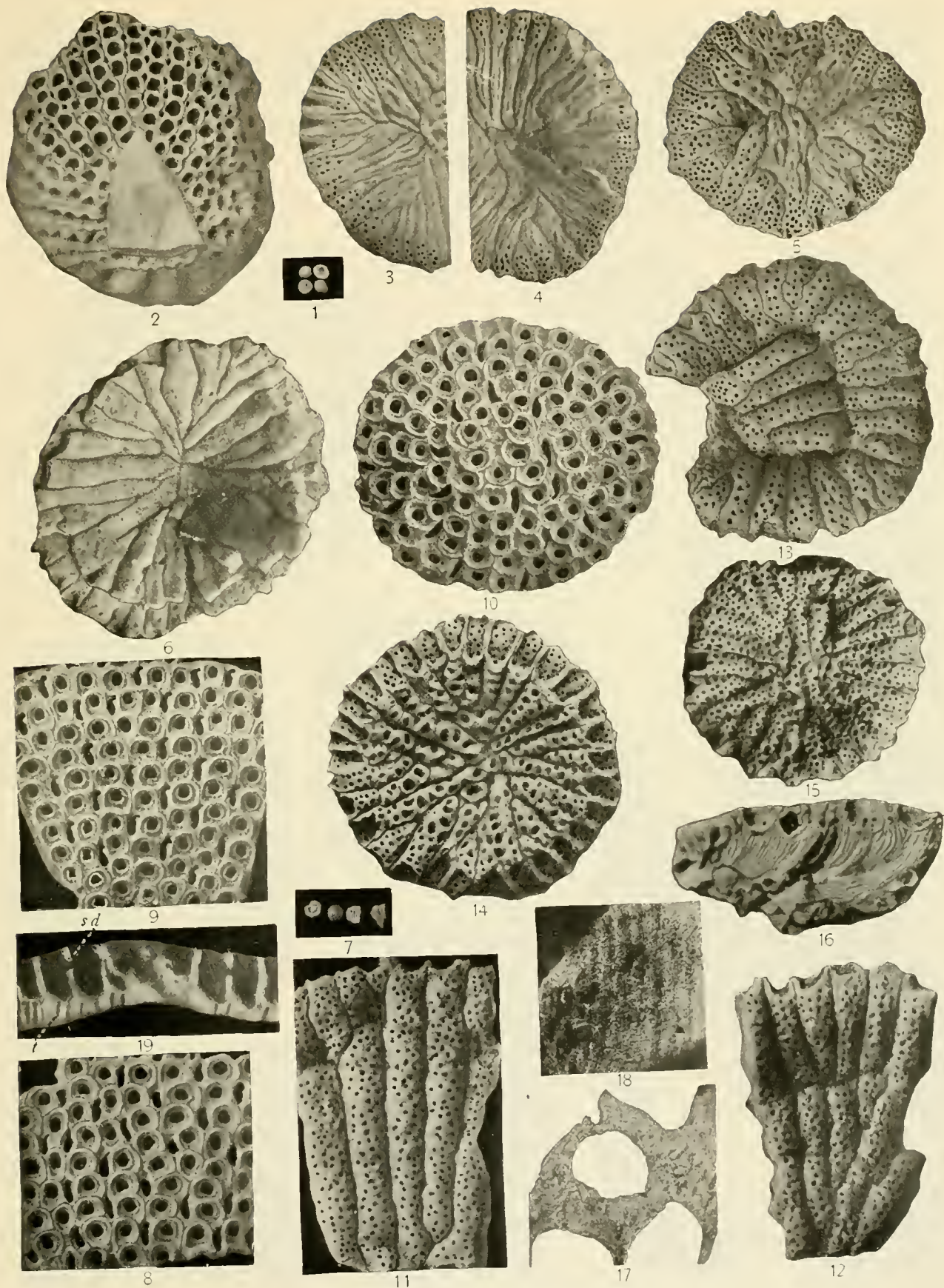
Cat. No. 63838, U.S.N.M.

FIGS. 7-19. *Otiocella perforata* Canu and Bassler, 1917 (p. 106).

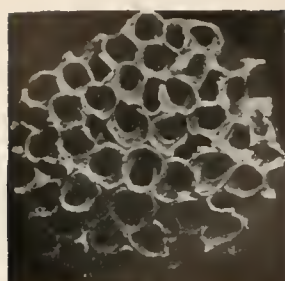
7. Two fragments and two complete zoaria, natural size.
8. Celluliferous surface, $\times 20$, exhibiting the usual characters of the species.
9. Another zoarium, $\times 20$, in which the auriculated vibraculum and the opesia collar are well developed.
10. An entire discoidal zoarium, $\times 20$.
11. The inner face of a fragmentary flabelliform zoarium, $\times 20$.
12. Another fragment, $\times 20$, showing centers of origin of new lines.
13. An incomplete zoarium, $\times 20$. The growth was flabelliform at first and then became discoidal.
- 14, 15. Inner face of two zoaria, $\times 20$. The ribs are broken at their extremity and the pores of this face are well developed.
16. Edge of the lines of zooecia, $\times 20$, with minutely furrowed surface.
17. Tangential thin section, $\times 100$, illustrating the olocystal structure of the walls.
18. Thin section, $\times 20$, showing the structure of the cryptocyst.
19. Transverse section, $\times 20$, showing the tubules (*t*) and the zooecia communicating by a distal pore (*sd*).

Lower Jacksonian (Moodys marl); Jackson, Mississippi.

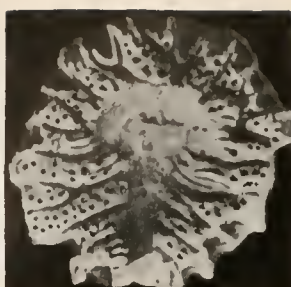
Cat. No. 62571, U.S.N.M.



CLAIBORNIAN CHEILOSTOMATOUS BRYOZOA.



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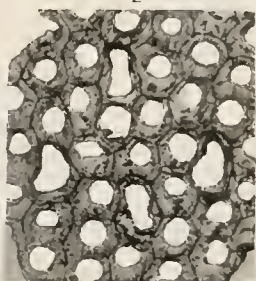
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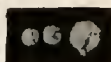
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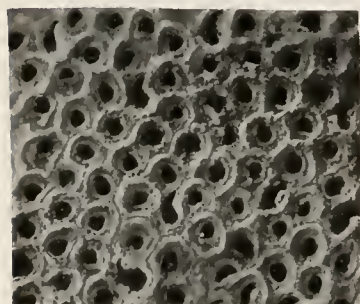
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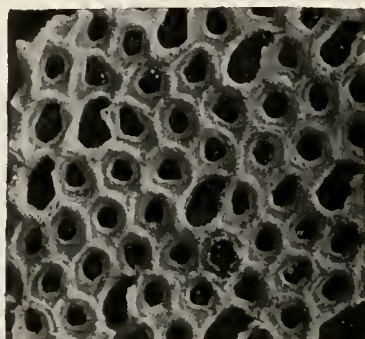
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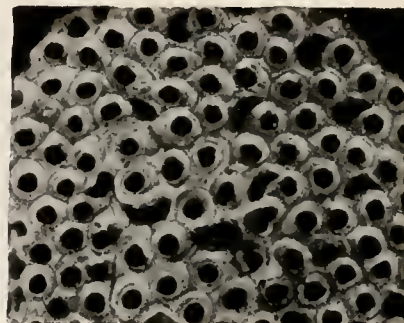
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CLAIBORNIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 12.

FIGS. 1, 2. *Otionella mccallici*, new species (p. 106).

1. The discoidal zoarium, $\times 20$. The ancestrula is seen below the center of the figure.
 2. Inner side of the same, $\times 20$, exhibiting the large pores of the radial lines of zooecia.
- Lower Jacksonian: $3\frac{1}{2}$ miles southeast of Shell Bluff post office, Georgia.

Cat. No. 63839, U.S.N.M.

FIGS. 3, 4. *Lunularia grandipora*, new species (p. 242).

3. The fragmentary type specimen, $\times 20$. Some of the zooecia are provided with well-defined ovicells.
 4. Inner side of the same example, $\times 20$, illustrating the large tuberosities.
- Claibornian (Lisbon formation): Wautubbee Hills, 4 miles south of Enterprise, Mississippi.

Cat. No. 63840, U.S.N.M.

FIGS. 5-15. *Otionella tuberosa*, new species (p. 107).

5. Three examples of the discoidal zoarium, natural size.
6. Tangential thin section through the inner side, $\times 25$.
7. Tangential thin section through the celluliferous side, $\times 20$.
8. Zooecia and avicularia of an average example, $\times 20$.
9. Section of a zoarium between the zooecia, $\times 20$. The inner side is thick and fibrous and narrow tubules may be noted between the tuberosities.
10. Inner side of a zoarium, $\times 20$. The discoidal form results from special budding along lateral lines.
11. Surface, $\times 20$, of an example with unusually large vibracula.
12. Inner side of a zoarium, $\times 20$. Both tuberose and smooth conditions of the rows are shown.
13. Tangential thin section, $\times 100$. The mural rim is seen to be composed of radially arranged olocystal elements.
14. Inner side of a fragment, $\times 20$, showing small pores perforating the rows without tuberosities.
15. Portion of a zoarium, $\times 20$, with large auriculated vibracula.

Lower Jacksonian (Moodys marl): Jackson, Mississippi.

Cat. No. 63841, U.S.N.M.

PLATE 13.

FIGS. 1-8. *Membrandocium rectum*, new species (p. 122).

1. The incrusting zoarium of this species, $\times 20$, somewhat abraded and showing the five distal diatellae. The endozooecial ovicell (broken) is present on a number of zooecia.
2. A zoarium of normal zooecia only, $\times 20$, two of which exhibit the small endozooecial ovicell distinctly.
3. Portion of a rather broad example, $\times 20$, exhibiting the ancestrular region with closed zooecia and an outer area of normal zooecia. The closed zooecia often bear the imprint of the opercular valve.
4. A specimen, $\times 20$, with broad, closed and normal zooecia.
5. Ancestrula and surrounding closed zooecia perforated by a pore, $\times 20$.
Vicksburgian (Byram marl): Byram, Mississippi.
Cat. No. 63842, U.S.N.M.
6. Elongate normal zooecia, $\times 20$.
Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.
Cat. No. 63865, U.S.N.M.
7. A small zoarium, $\times 20$, with a regenerated zooecium just below the ovicelled one.
Lower Jacksonian: $3\frac{1}{2}$ miles southeast of Shell Bluff post office, Georgia.
Cat. No. 63843, U.S.N.M.
8. The usual Jacksonian form of the species, $\times 20$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63844, U.S.N.M.

FIG. 9. *Conopeum lucorarii* Busk, 1852 (p. 89).

- The incrusting zoarium of this widely distributed species, $\times 20$.
Claibornian (Gosport sand): Claiborne, Alabama.
Cat. No. 63845, U.S.N.M.

FIGS. 10-12. *Lunularia ligulata*, new species (p. 243).

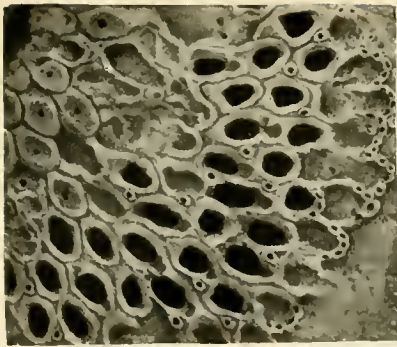
10. Celluliferous surface of a zoarium, $\times 20$, showing the tongue-like process of the hydrostatic zooecia.
11. View of another zoarium, $\times 20$, illustrating the rectangular normal zooecia and the fusiform vibracula.
12. Inner side of a zoarium, $\times 20$, showing the perforated convex radial ribs.
Lower Jacksonian (Moodys marl): Jackson, Mississippi.
Cat. No. 63846, U.S.N.M.

FIGS. 13-15. *Lunularia claibornica*, new species (p. 248).

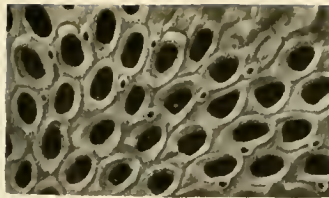
13. Inner side of a fragmentary zoarium, $\times 20$, showing convex rows pierced by pores.
14. A transverse fracture between the zooecia, $\times 20$.
15. Celluliferous side of zoarium, $\times 20$, exhibiting occurrence of normal zooecia only and arrangement of vibracula.
Claibornian (Gosport sand): Claiborne, Alabama.
Cat. No. 63847, U.S.N.M.

FIG. 16. *Membraniporina lara* Reuss, 1869 (p. 96).

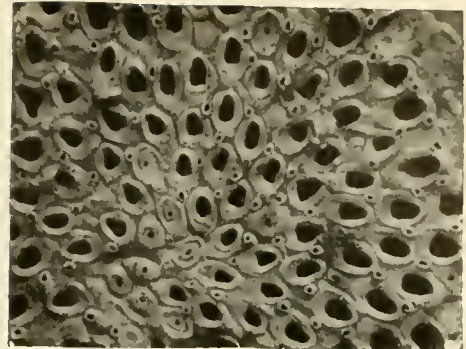
- Portion of the incrusting zoarium, $\times 20$, of the American Eocene specimen referred to this species. One zooecium exhibits total regeneration.
Claibornian (Gosport sand): 1 mile southwest of Rockville, Clarke County, Alabama.
Cat. No. 63848, U.S.N.M.



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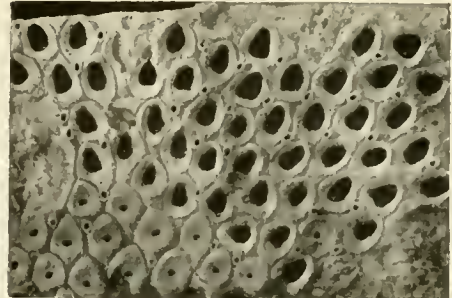
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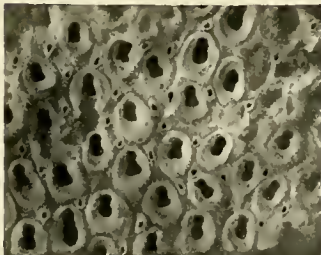
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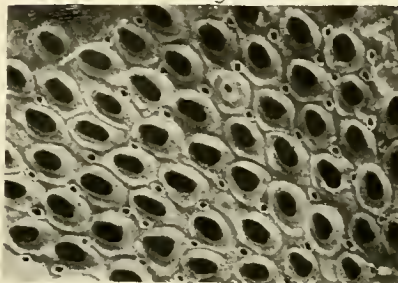
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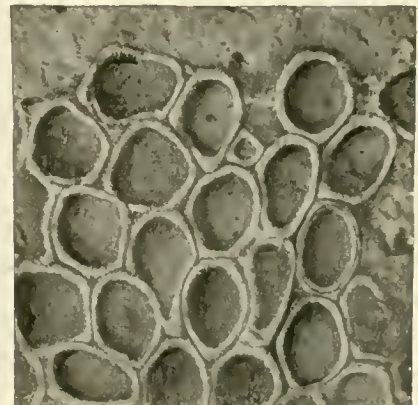
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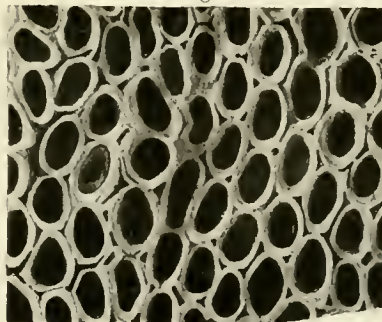
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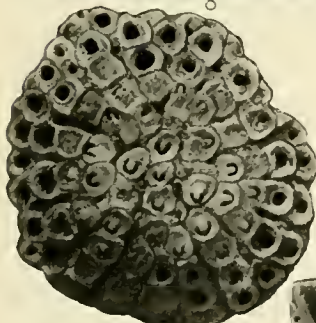
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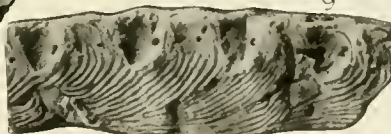
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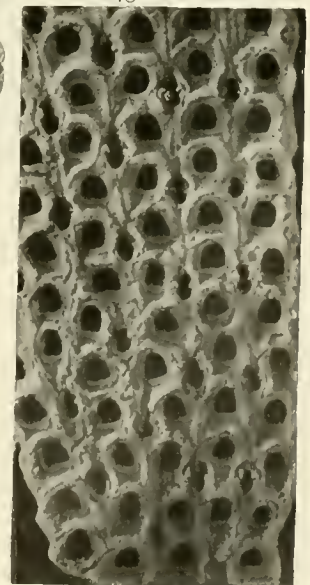
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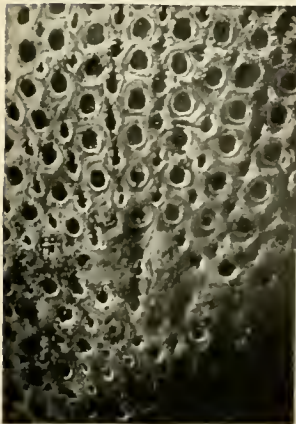
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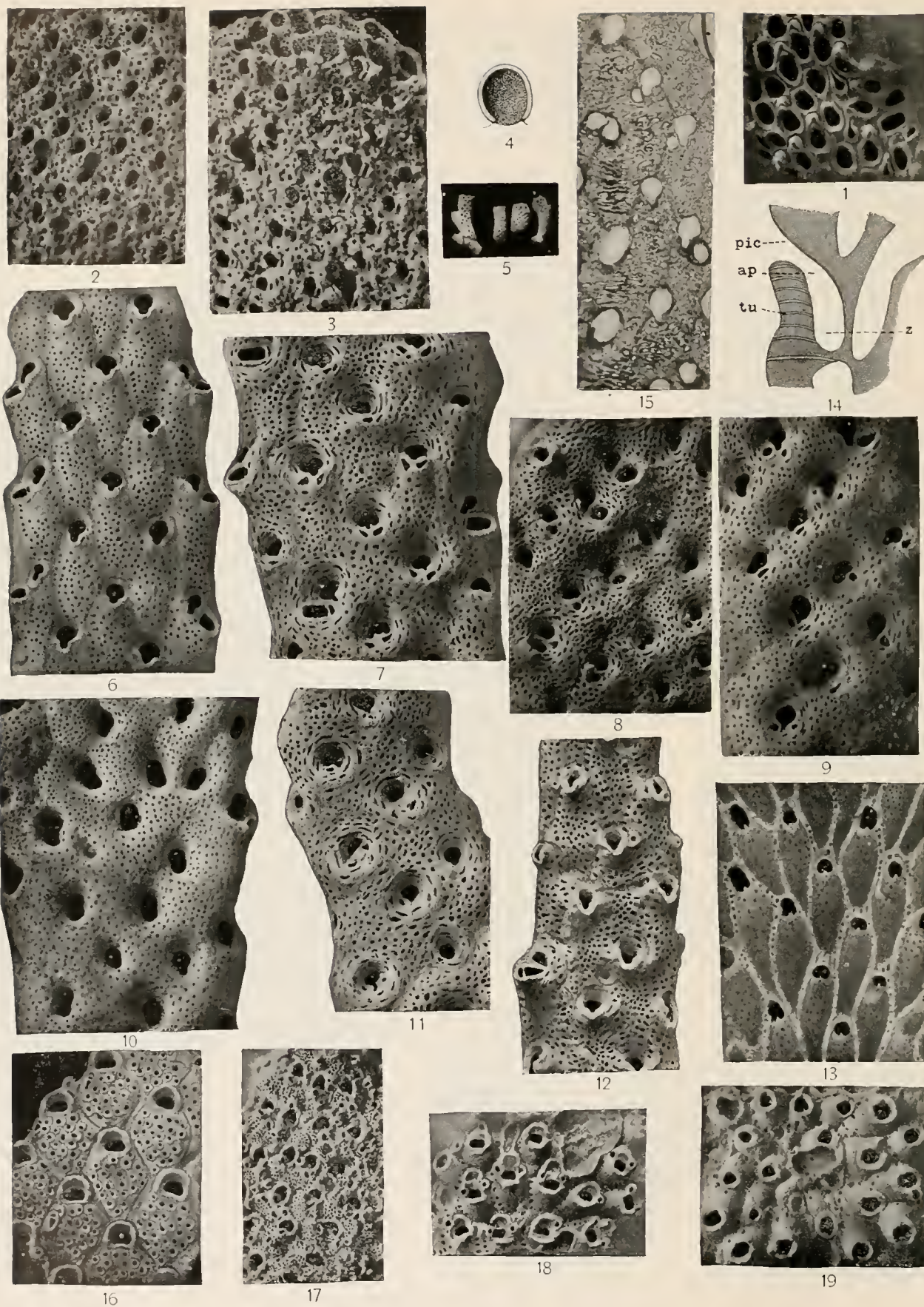


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CLAIBORNIAN CHEILOSTOMATOUS BRYOZOA.



CLAIBORNIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 14.

FIG. 1. *Callopora cucullata*, new species (p. 153).

The incrusting type-specimen, $\times 20$, exhibiting the hyperstomial ovicell with a triangular area and the acuminate avicularia.

Lower Jacksonian; $3\frac{1}{2}$ miles southeast of Shell Bluff post office, Georgia.

Cat. No. 63849, U.S.N.M.

FIGS. 2-4. *Schizemiella clabornica* Canu and Bassler, 1917 (p. 440).

2. Surface of the bilamellar zoarium, $\times 20$. The wide rimule of the apertura, the hyperstomial ovicell (broken), and the avicularium within the peristomie are illustrated.

3. Another fragment, $\times 20$, exhibiting several zooecia with broken ovicells. At the top the interior of the zooecia with the tremocystal pores is visible.

4. Sketch of the apertura, much enlarged, to show the wide rimule.

Claibornian (Gosport sand): Claiborne, Alabama.

Cat. No. 62595, U.S.N.M.

FIGS. 5-15. *Metradolium sulcifera*, new species (p. 417).

5. Four fragments of the free, bilamellar, narrow zoarium, natural size.

6. A young frond, $\times 20$, showing the lateral zooecia only are provided with avicularia. A few of the zooecia are limited by a thread-like elevation.

7. A more developed zoarium, $\times 20$. The large avicularia are restricted to the lateral zooecia.

8. An example with normal zooecia, $\times 20$, exhibiting large and small avicularia.

9. Another stage of growth, $\times 20$, with the avicularia less conspicuous.

10-11. Views of two old zoaria, $\times 20$, in which most of the avicularia are obscured by the tubules.

12. A young branch, $\times 20$. The large avicularium is developed only on the lateral zooecia.

13. Interior of the zooecia, $\times 20$. A lyrula-like process is visible on the proximal border of the apertura.

14. Schematic drawing of a longitudinal section, $\times 20$. *ap*, apertura; *pic*, peristomie; *tu*, tubule; *z*, zooecium.

15. Tangential thin section, $\times 20$, showing the appearance of the sulci.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 63850, U.S.N.M.

FIG. 16. *Cheilopora orbifera*, new species (p. 526).

The unilamellar zoarium, $\times 20$. The lateral avicularium and the pores of the tremocyst surrounded by a collar are distinctive.

Claibornian (Gosport sand): Bluff on Tombigbee River, Gopher Hill, Alabama.

Cat. No. 63851, U.S.N.M.

FIG. 17. *Porella obliqua*, new species (p. 481).

The incrusting type-specimen, $\times 20$. The median avicularium is oblique while the frontal is often obscured by two adventitious avicularia.

Lower Jacksonian; $3\frac{1}{2}$ miles southeast of Shell Bluff post office, Georgia.

Cat. No. 63852, U.S.N.M.

FIGS. 18, 19. *Perigastrella ansata*, new species (p. 576).

18. View of the incrusting zoarium, $\times 20$, exhibiting ovicells (broken) and avicularia on the peristome.

19. Zooecia, $\times 20$. The detachable pleurocyst and the olocyst with widely spaced areolae are shown.

Claibornian (Gosport sand): 1 mile southwest of Rockville, Clarke County, Alabama.

Cat. No. 63853, U. S. N. M.

PLATE 15.

FIGS. 1-10. *Ochetosella Jacksonica* Canu and Bassler, 1917 (p. 452).

1. Simple and bifurcated fragments of the free cylindrical zoarium, natural size.
 2. Four specimens, natural size, showing anastomosis of the branches.
 3. A small fragment, $\times 20$, with the ovicell preserved on one zooecium.
 - 4, 5. Fragments of young zoaria, $\times 20$, with well-developed muero.
 6. A young branch, $\times 20$, showing no separating thread between the zooecia.
 7. More mature example, $\times 20$. A prominent ridge separates the zooecia.
 8. Zooecia in a more advanced stage, $\times 20$, where the pleurocyst covers the frontal.
 9. Zooecia, $\times 20$, with well-developed areolae, around which the pleurocyst has been deposited. The uppermost zooecium bears an avicularium.
 10. An example, $\times 20$, with several ovicelled zooecia. The pleurocyst covers the ovicells.
- Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina
Cat. No. 62599, U.S.N.M.

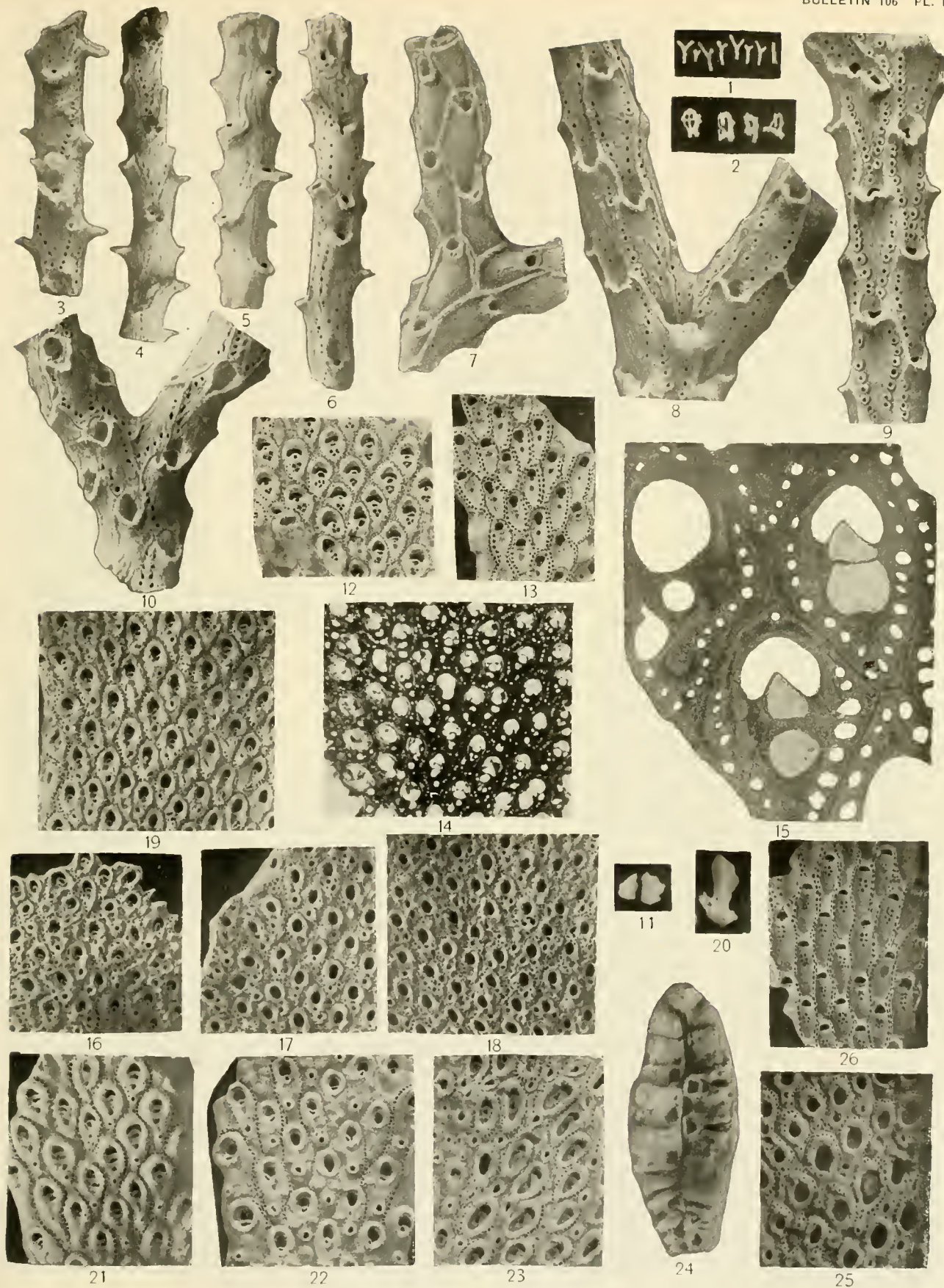
FIGS. 11-19. *Adconellopsis transversa*, new species (p. 566).

11. Fragments of the free bilamellar zoarium, natural size.
 12. Fragment, $\times 20$, exhibiting gonoeccia, distinguished by their larger size and by having three ascopores situated in a triangular cavity of the frontal.
 13. View of the interior of the zooecia, $\times 20$. The apertura, ascopore, and areolae are illustrated.
 14. Tangential thin section, $\times 20$, showing union of occasional areolae to form adventitious avicularia.
 15. Several zooecia of a tangential thin section, $\times 100$. The triangular opening below the apertura is the median avicularium. Below this is the ascopore.
- Lower Jacksonian (Moodys marl): Jackson, Mississippi.
Cat. No. 63854, U.S.N.M.
16. Zooecia, $\times 20$, with the peristomial avicularia visible and salient.
 17. Another fragment, $\times 20$, in which the peristomial avicularia are imbedded and invisible.
 18. Surface, $\times 20$, exhibiting zooecia with the peristomial avicularia imbedded, the adventitious avicularia visible, the ascopore opening near the peristomie and two adventitious avicularia.
 19. An example, $\times 20$, in which the ascopore opens frequently into the peristomie.
- Claibornian (Gosport sand): 1 mile southwest of Rockville, Alabama.

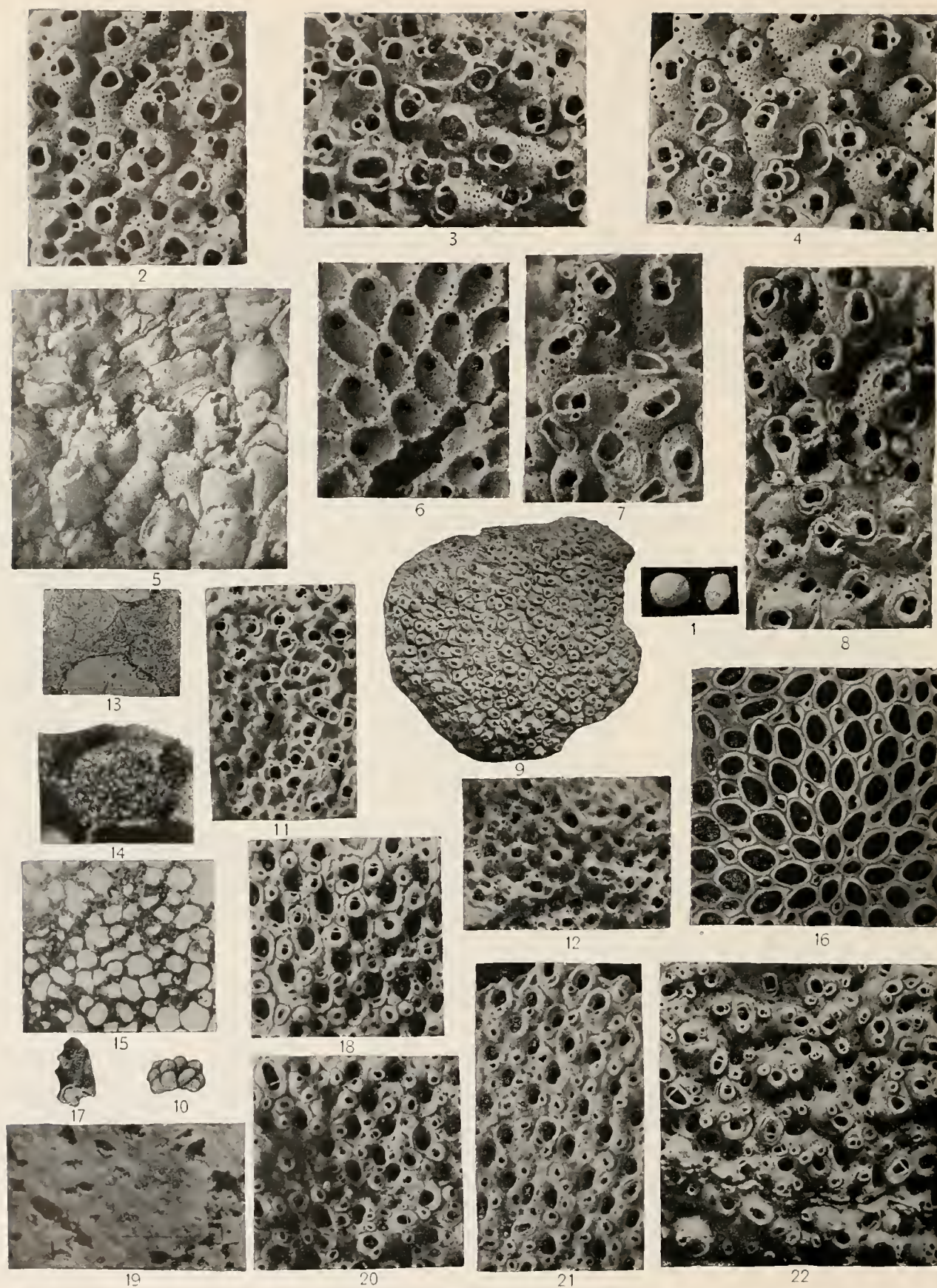
Cat. No. 63855, U.S.N.M.

FIGS. 20-26. *Adconellopsis quisenberryae*, new species (p. 566).

20. The free bilamellar zoarium, natural size.
 21. Portion of a young zoarium, $\times 20$. The cribriform area contained but one pore.
 22. An old example, $\times 20$, showing the salient adventitious avicularium.
- Lower Jacksonian (Moodys marl): Jackson, Mississippi.
Cat. No. 63856, U.S.N.M.
23. View of the basal zooecia, $\times 20$, covered with a thick calcareous deposit. The avicularium is visible at the bottom of the total area.
 24. Transverse section of a zoarium, $\times 20$, showing the thick walls.
 25. A fragment, $\times 20$, exhibiting old zooecia with the avicularium no longer visible.
 26. Interior of zooecia, $\times 20$. The cribriform area has five to seven pores.
- Claibornian (Gosport sand): 1 mile southwest of Rockville, Alabama.
Cat. No. 63857, U.S.N.M.



CLAIBORNIAN CHEILOSTOMATOUS BRYOZOA.



CLAIBORNIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 16.

FIGS. 1-9. *Holoporella granulosa*, new species (p. 607).

1. Two examples of the small globular zoarium, natural size.
2. Surface of zooecia, $\times 20$, showing the convex frontal with scattered areolar pores.
3. Another surface, $\times 20$, with several ovicelled zooecia.
4. Well preserved zooecia, $\times 20$, several of which have the ovicell intact. The frontal of both ovicell and zooecia is granular.
5. Lower side of zoarium, $\times 20$. The zooecia are oriented and their walls are composed of several calcareous layers.
6. Interior of zooecia, $\times 20$. The apertura is oblique and without cardelles, and the areolae are visible.
7. Zooecia, $\times 20$, with interzooecial avicularia having no pivot.
8. Surface of zoarium, $\times 20$, exhibiting zooecia in which the granular pleurocyst (with areolae) may be separated from the subjacent, smooth olocyst.
9. Celluliferous side of a zoarium, $\times 5$.

Claibornian (Gosport sand); Claiborne, Alabama.

Cat. No. 63858, U.S.N.M.

FIGS. 10-15. *Holoporella orbiculifera*, new species (p. 605).

10. The small massive zoarium, natural size.
11. Surface, $\times 20$, showing the distinct superficial zooecia and the less distinct deep zooecia.
12. Portion of another zoarium, $\times 20$, in which the frontal of the superficial zooecia preserves a few areolae.
13. A small portion of a tangential thin section, $\times 100$. The olocystal structure of the wall is shown.
14. Another portion, $\times 100$, passing through the frontal and showing its olocystal nature.
15. Tangential thin section, $\times 20$, exhibiting pores between the zooecia. These are the cavities of the beak bearing the avicularium.

Claibornian (Gosport sand); Claiborne, Alabama.

Cat. No. 63859, U.S.N.M.

FIG. 16. *Vibracellina capillaria* Camu and Bassler, 1917 (p. 110).

The incrusting type zoarium, $\times 20$, exhibiting the region of the ancestrula and neighboring zooecia.

Claibornian (Cook Mountain formation); Moseley's Ferry, Caldwell County, Texas.

Cat. No. 62572, U.S.N.M.

FIGS 17-22. *Kleidionella parasitica*, new species (p. 619).

17. The massive zoarium, natural size. Bilamellar fronds are given forth from this base.
18. Surface, $\times 20$, showing interzooecial avicularia with pivot and rounded beak; they are as large as the zooecia.
19. Lower side of zoarium, $\times 20$.
- 20, 21. Portions of two bilamellar fronds, $\times 20$, where the axial zooecia are oriented.
22. Basal part of the zoarium, $\times 20$, where cumulate zooecia are best developed. Numerous small avicularia with pivot and a lesser number of the large interzooecial avicularia are visible.

Lower Jacksonian; Three and one-half miles southeast of Shell Bluff post office, Georgia.

Cat. No. 63860, U.S.N.M.

PLATE 17.

FIGS. 1-14. *Acanthionella occioporosa*, new species (p. 614).

1. Fragments of the free bilamellar zoarium, natural size.
2. Surface, $\times 20$, showing zooecia with a thick frontal and separated by a distinct thread-like ridge. Both oriented and cumulate zooecia are present.
3. Another surface, $\times 20$, showing that the lyrula is not on the peristomial avicularium.
4. A fragment, $\times 20$, with ovicelled zooecia, a few of which show the much branched spine on its porous area.
5. Another fragment, $\times 20$. The lyrula is developed on the peristomial avicularia.
6. An interior, $\times 30$, showing the olocystal fibers arranged radially about the lyrula.
7. Young zooecia, $\times 20$, with gibbose frontal.
8. The usual aspect of the interior of the zooecia, $\times 20$.
9. Transverse fracture of zoarium, $\times 20$, illustrating the concentric lamellar structure.
10. Another portion of the same zoarium shown in figure 2, $\times 20$. Cumulate zooecia are developed with gibbosities.
11. Tangential thin section, $\times 20$.
12. Tangential section of three zooecia, $\times 100$, passing through the frontal. The arrangement of the olocystal elements in radial fibers about the lyrula is apparent.
13. Thin section, $\times 100$, showing microscopic structure of zooecial wall.
14. Several zooecia of the same section, $\times 100$. The apertura, lyrula and ovicells are shown.

Claibornian (Gosport sand): Claiborne, Alabama.

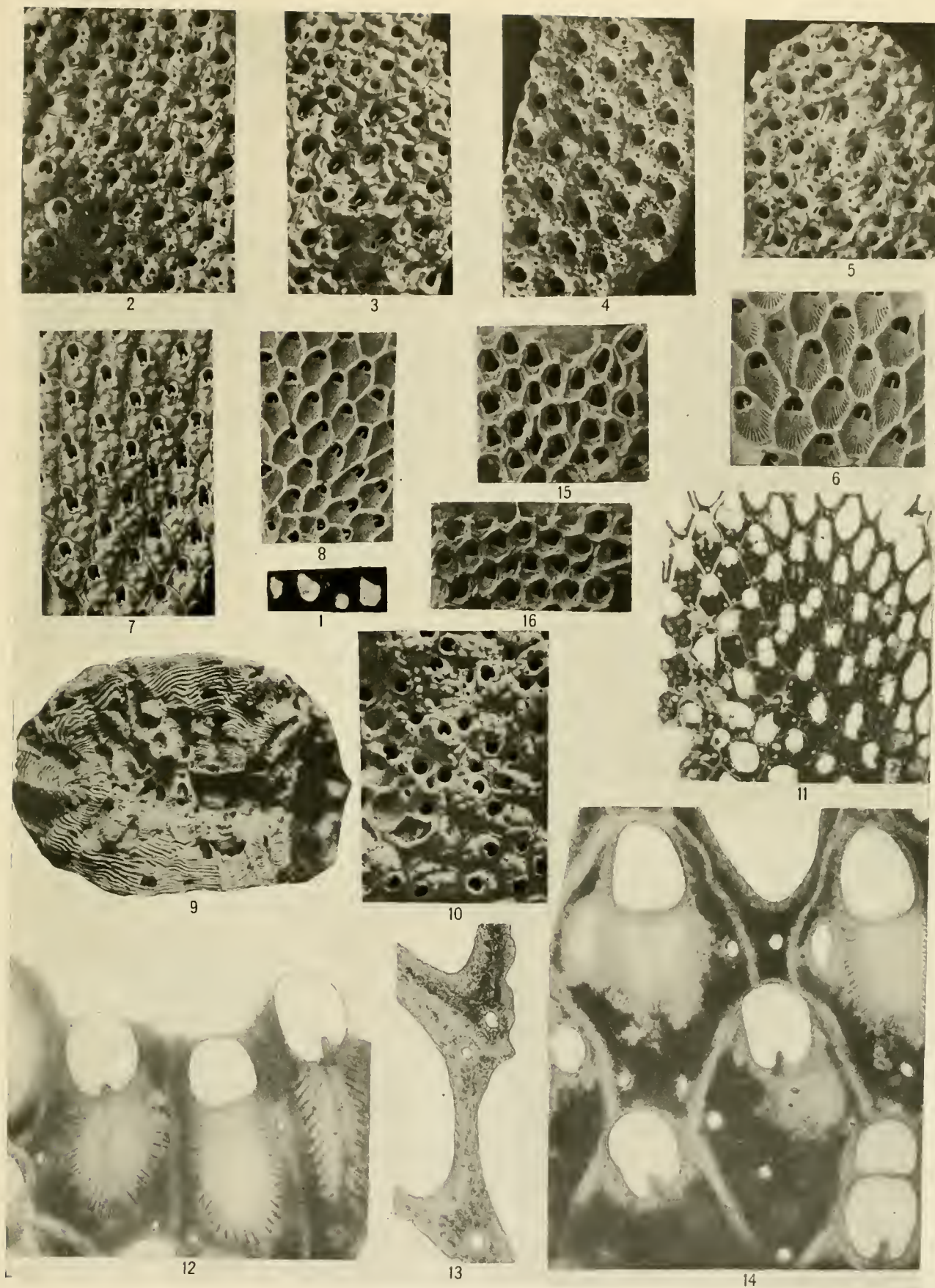
Cat. No. 63861, U.S.N.M.

FIGS. 15, 16. *Onychocella georgiana*, new species (p. 206).

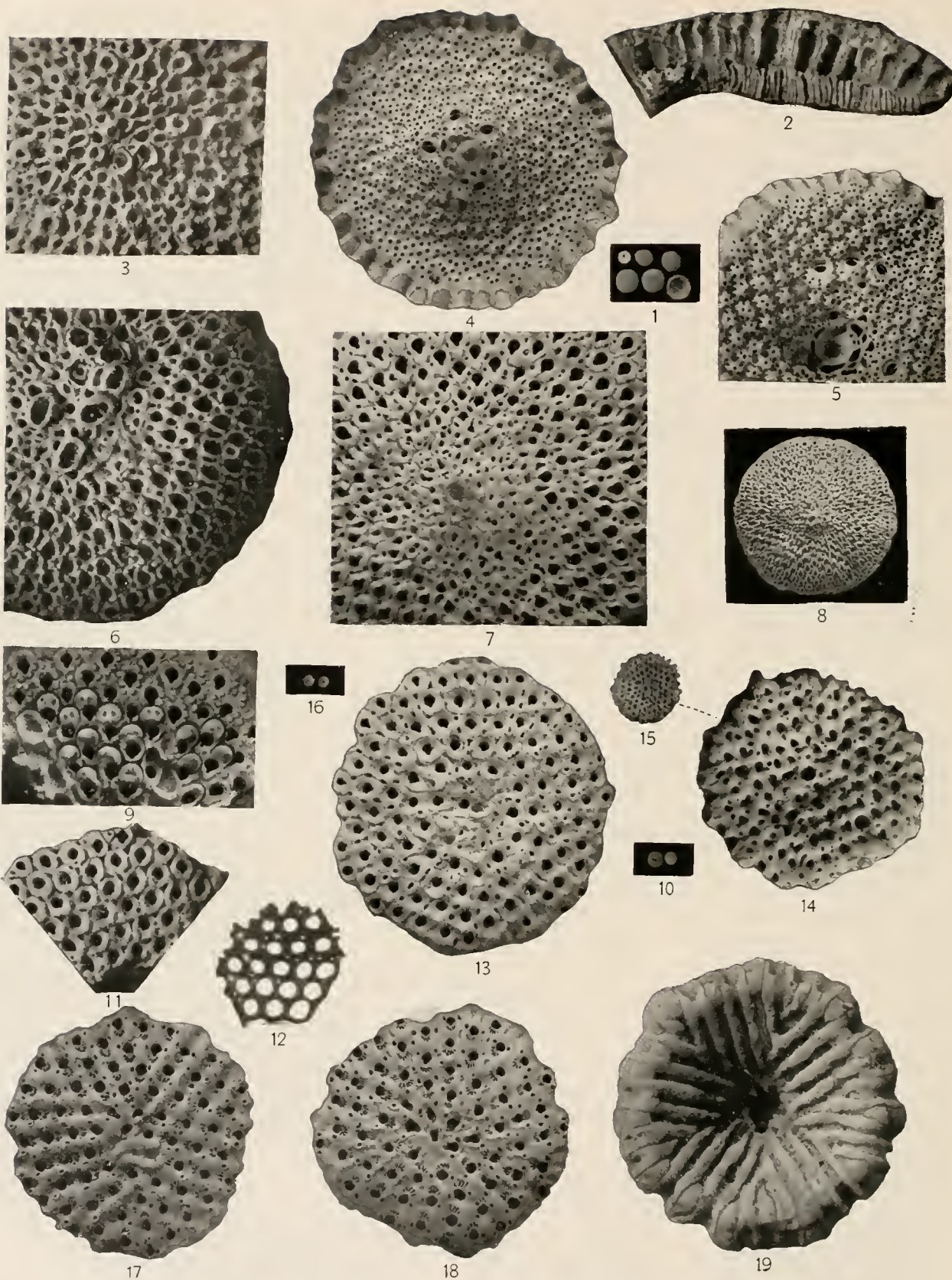
15. The encrusting zoarium, $\times 20$. The cryptocyst of the zooecia is finely granulose.
16. Another small zoarium, $\times 20$, showing slight variations.

Lower Jacksonian: Three and one-half miles southeast of Shell Bluff post office, Georgia.

Cat. No. 63862, U.S.N.M.



CLAIBORNIAN CHEILOSTOMATOUS BRYOZOA.



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PLATE 18.

FIGS. 1-9. *Schizorthosceos interstitia* Lea, 1833 (p. 626).

1. Six zoaria, natural size.
 2. Transverse fracture of a zoarium, $\times 20$. The pores of the base are prolonged into tubules.
 3. Ancestrular portion of a zoarium, $\times 20$, with numerous heterozooecia.
 4. Inner side of a zoarium, $\times 20$, showing the ancestrula at the center and avicularia with bar near by.
 5. Another view of the ancestrula as shown on the inner side, $\times 20$, where simple cavities surround the ancestrula.
 6. Portion of outer side of zoarium, $\times 20$, showing several large membraniporoid zooecia.
 7. Central portion of the exterior of a zoarium, $\times 20$. The ancestrula is surrounded by radicular zooecia.
 8. An example, $\times 6$.
 9. Portion of zoarium, $\times 20$, with ovicelled zooecia.
- Claibornian (Gosport sand); Claiborne, Alabama.
Cat. No. 62899, U.S.N.M.

FIGS. 10-15. *Schizorthosceos grandiporosum*, new species (p. 627).

10. Two zoaria, natural size.
11. Portion of a zoarium, $\times 20$, showing distinctness of zooecia exteriorly.
12. Tangential thin section, $\times 20$.
13. Celluliferous outer face, $\times 20$, illustrating the zooecia and the separating zooeciules.
- 14, 15. Basal side of a zoarium, $\times 6$, and $\times 20$. The zooecia are indistinct, but each is marked by one large and one small pore.

Claibornian (Gosport sand); Claiborne, Alabama.
Cat. No. 63863, U.S.N.M.

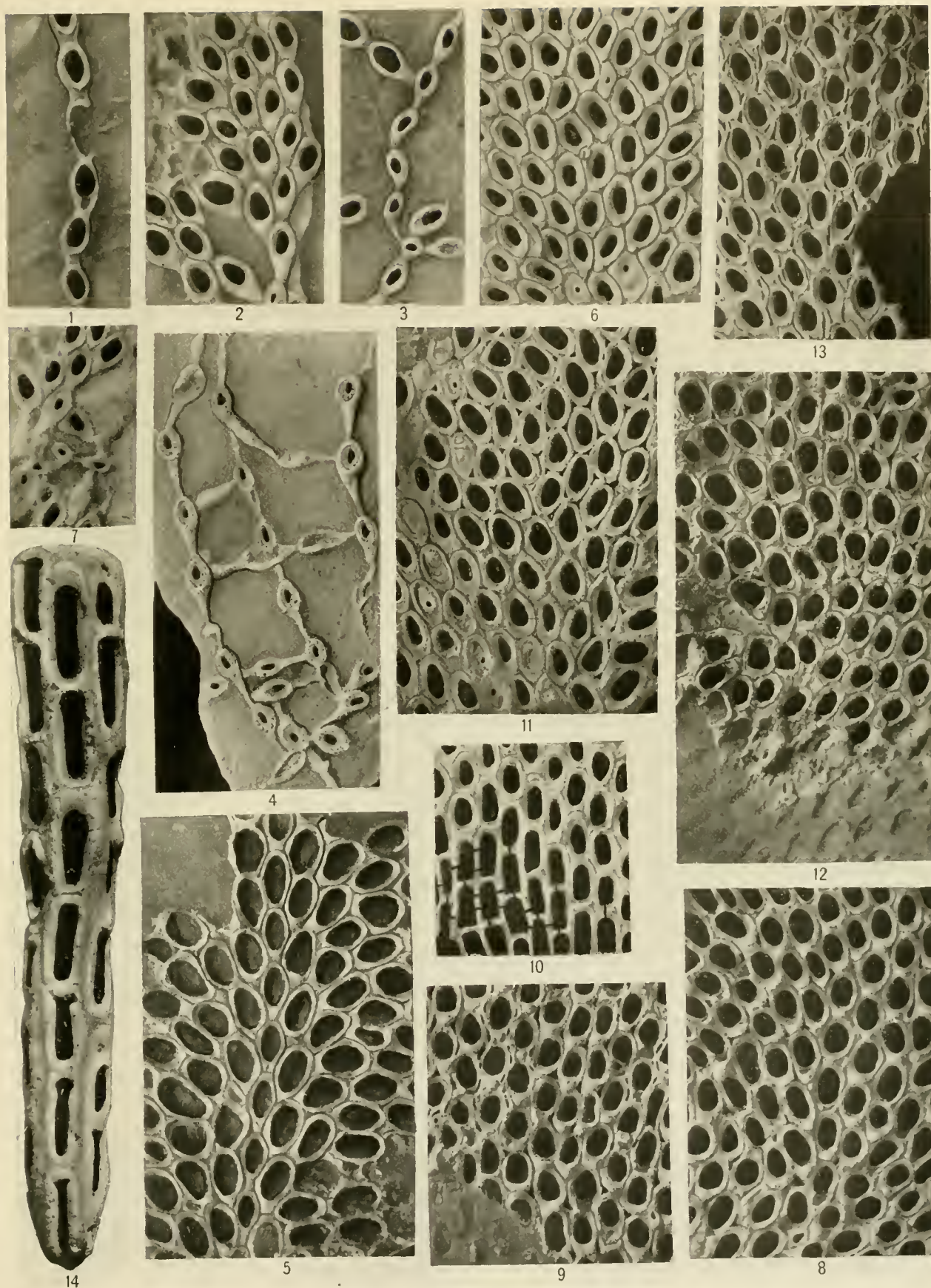
FIGS. 16-19. *Schizorthosceos radiatum*, new species (p. 628).

16. Two examples, natural size.
- 17, 18. Two zoaria, $\times 20$. The lateral avicularia and the costules of the zooecial frontal are indicated.
19. Inner side of a zoarium, $\times 20$, exhibiting the characteristic radiating ribs.

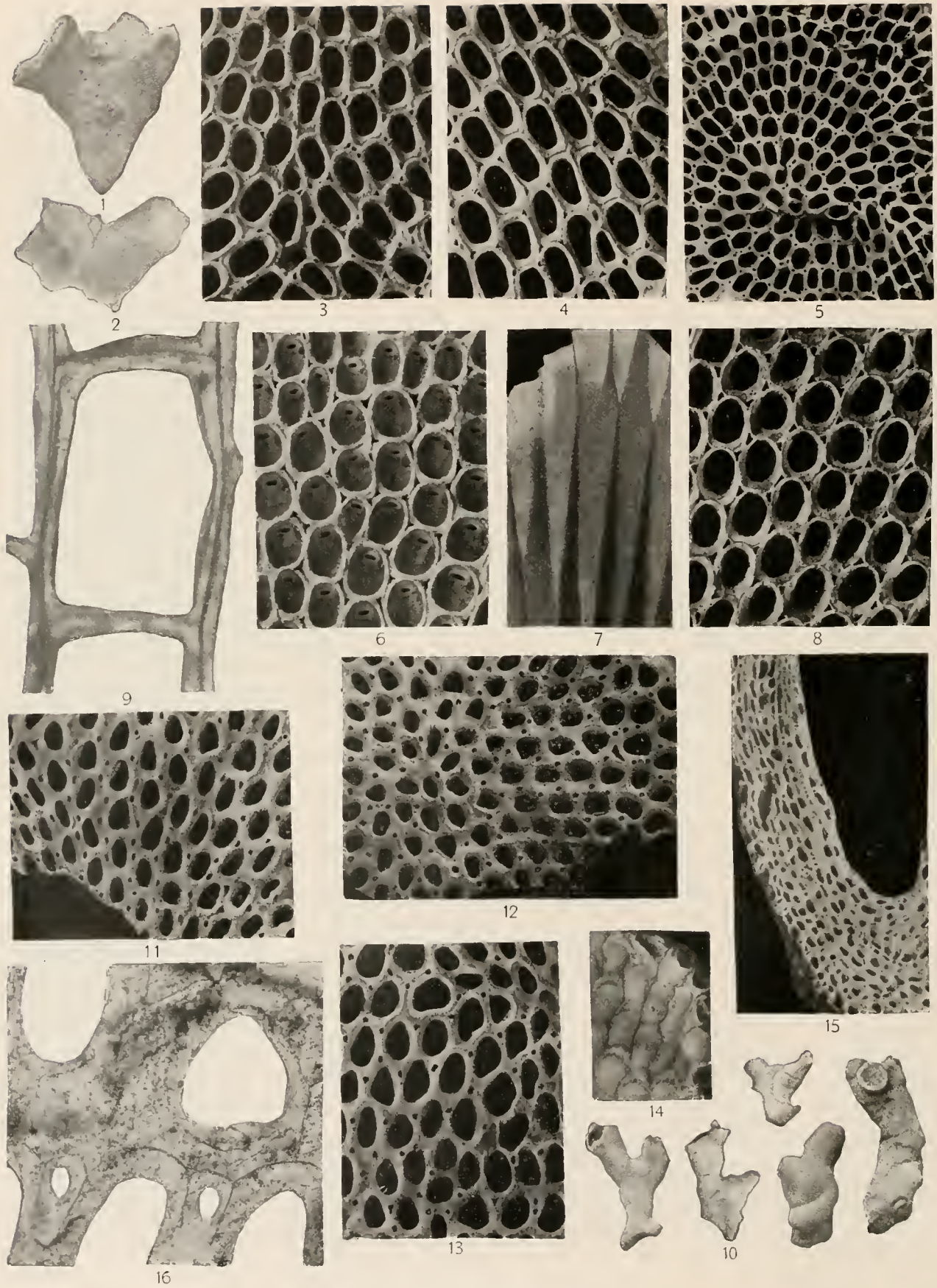
Claibornian (Gosport sand); Claiborne, Alabama.
Cat. No. 63864, U.S.N.M.

PLATE 19.

- FIGS. 1-3. *Elcebra parvimeter*, new species (p. 77).
1. Small portion of a zoarium, $\times 20$, exhibiting a uniserial branch.
 2. A multiserial portion of the same zoarium, $\times 20$.
 3. Ancestrular portion, $\times 20$.
- Lower Jacksonian (Moody's marl): Two and one-half miles north of Robert, Newton County, Mississippi.
Cat. No. 63865, U.S.N.M.
- FIG. 4. *Pycipora tuberculum* Lonsdale, 1845 (p. 80).
A zoarium, $\times 20$, with a calcified zooecium among the ordinary ones.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63866, U.S.N.M.
- FIG. 5. *Membranipora sinuolum*, new species, (p. 96).
Surface of type-specimen, $\times 20$, showing the absence of basal olocyst of zooecia.
Lower Jacksonian (Moody's marl): Two and one-half miles north of Robert, Newton County, Mississippi.
Cat. No. 63876, U.S.N.M.
- FIGS. 6, 7. *Conopceum tuberosum*, new species (p. 90).
6. The incrusting type-specimen, $\times 20$, showing the characteristic interopercial cavities and the frontal tuberosity.
 7. Portion of the same zoarium, $\times 20$, exhibiting the small elliptical ancestrula.
- Lower Jacksonian (Moody's marl): Two and one-half miles north of Robert, Newton County, Mississippi.
Cat. No. 63868, U.S.N.M.
- FIGS. 8-10. *Conopceum hoockeri* Haime, 1850 (p. 91).
8. Surface of the incrusting zoarium, $\times 20$.
 9. Part of another zoarium, $\times 20$, illustrating the humplike gymnocyst and the elliptical impression left upon the substratum.
 10. An abraded zoarium, $\times 20$. Two lateral and one distal septulae are to be noted.
- Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 63869, U.S.N.M.
- FIGS. 11-13. *Conopceum concavum*, new species (p. 92).
11. Portion of a large incrusting zoarium, $\times 20$. A number of the zooecia are closed by a perforated lamina.
 12. Another zoarium, $\times 20$, in which the concave cryptocyst and the perforations in the substratum are shown.
 13. A third zoarium, $\times 20$, exhibiting the interopercial cavities especially well.
- Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 63870, U.S.N.M.
- FIG. 14. *Membranipora clariformis*, new species (p. 97).
The free club-shaped type example, $\times 20$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63871, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



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PLATE 20.

FIGS. 1-9. *Conopceum lamellosum*, new species (p. 92).

- 1, 2. Two of the undulating zoarial fronds, natural size.
- 3, 4. Two views, $\times 20$, of deformed zooecia showing variations in form.
5. Surface of zoaria, $\times 10$, exhibiting origin of an additional lamella.
6. Young zooecia, $\times 20$, with thin mural rim and the distal septula (in black) and two distal impressions of each zooecium (in gray) visible.
7. Dorsal of a zooecial layer, $\times 20$.
8. Normal zooecia, $\times 20$, with mural rim enlarged at the base and interopesia cavities plainly visible.
9. Tangential thin section of a zooecium, $\times 100$, showing structure and occurrence of a septula.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 63872, U.S.N.M.

FIGS. 10-16. *Conopceum arborescens*, new species (p. 93).

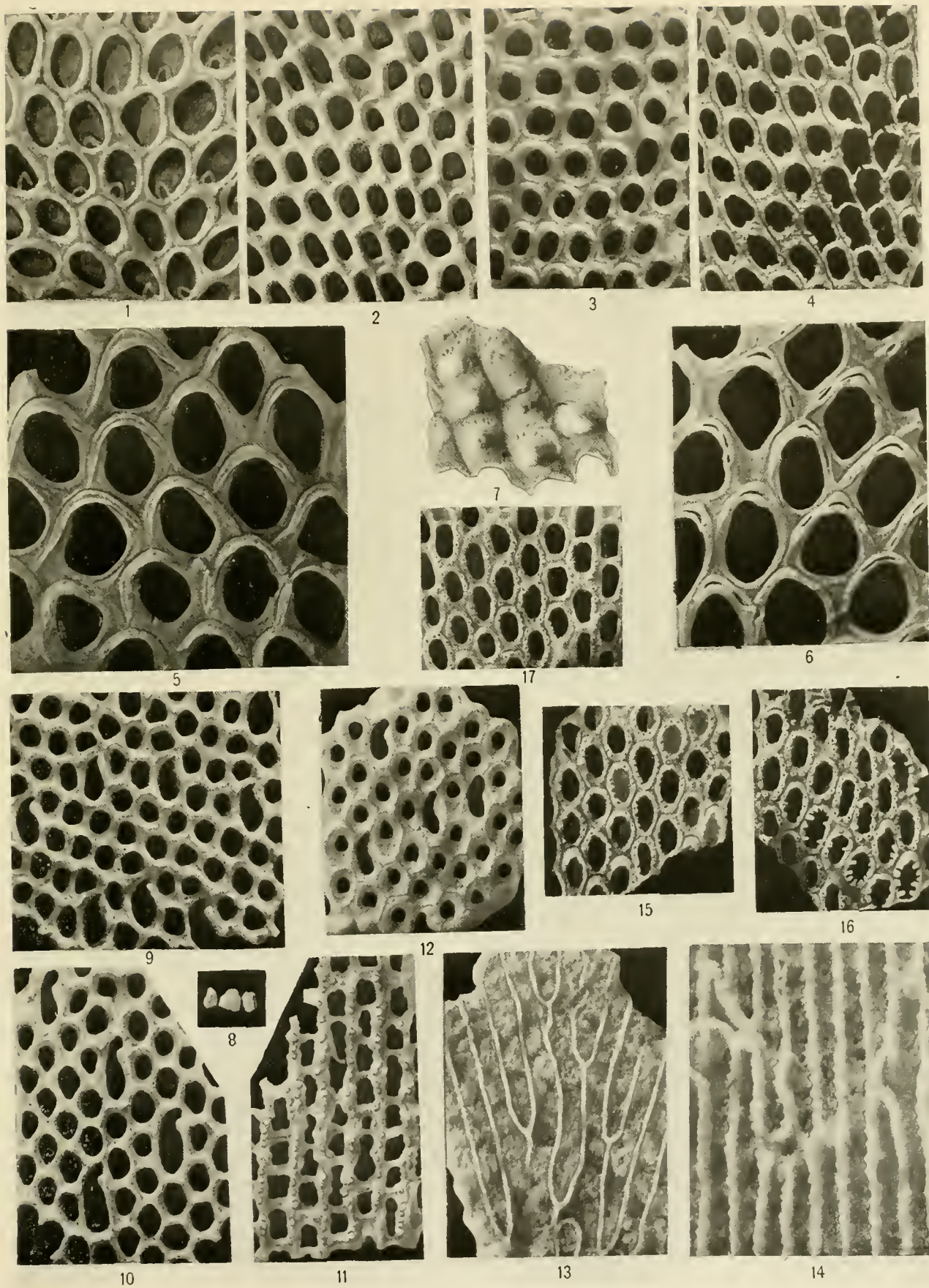
10. Five zoaria, natural size showing the free, irregular, branched form of growth.
11. Zooecial surface, $\times 20$. The mural rims are sometimes separated by a small furrow.
12. A superimposed zoarial layer, $\times 20$, exhibiting same methods of origin as in *Conopceum lamellosum*.
13. Zooecia, $\times 20$, with interopesia cavities which sometimes resemble small avicularia.
14. Inner face of zoarium showing dorsal side of zooecia, $\times 20$. Each has a distal collar.
15. Longitudinal section of one side of zoarium, $\times 10$, exhibiting the many superimposed layers.
16. Tangential thin section, $\times 100$, exhibiting wall structure. The interopesia cavities have special walls.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

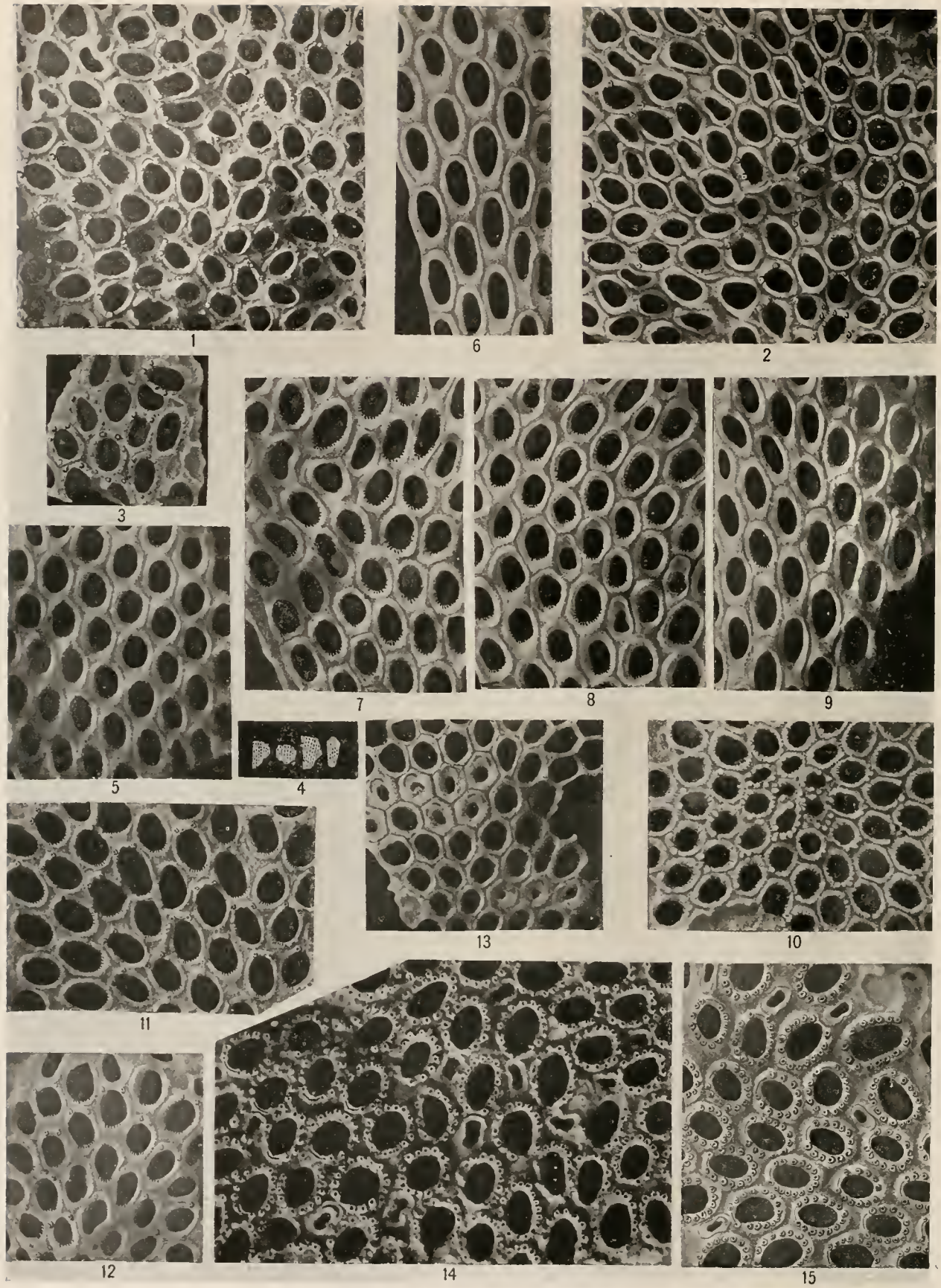
Cat. No. 63873, U.S.N.M.

PLATE 21.

- FIG. 1. *Membraniporina benjamini* Canu and Bassler, 1917 (p. 98).
Surface of the type-specimen, $\times 20$. The large zooecia with the incomplete small canal in the opesium are to be noted.
Middle Jacksonian: Rich Hill, Crawford County, Georgia.
Cat. No. 62569, U.S.N.M.
- FIGS. 2-4. *Acanthodesia saratii* Audouin, 1826 (p. 100).
2. An incrusting zoarium, $\times 20$, with long zooecia.
3. Another zoarium, $\times 20$, exhibiting broad zooecia.
Vicksburgian ("Chimney rock" of Marianna limestone) One mile north of Monroeville, Alabama.
Cat. No. 63874, U.S.N.M.
4. A slightly abraded specimen, $\times 20$, with the opesial denticle and the septulae visible in some zooecia.
Vicksburgian ("Chimney rock" of Marianna limestone). Three miles southeast of Vicksburg, Jasper County, Mississippi.
Cat. No. 63875, U.S.N.M.
- FIGS. 5-7. *Adenifera inarmata* Canu and Bassler, 1917 (p. 102).
5. Portion of the unilamellar zoarium, $\times 20$. The distal elevation of the mural rim is well developed.
6. Another zoarium, $\times 20$, in which the distal thickening exhibits the two gland openings.
7. Dorsal side of zoarium, $\times 10$, showing the pronounced hydrostatic tuberosities.
Middle Jacksonian: near Lenuds Ferry, South Carolina.
Cat. No. 62570, U.S.N.M.
- FIGS. 8-14. *Otionella cura*, new species (p. 108).
8. Several fragments, natural size, of the orbicular zoarium.
9, 10. Views of two zoaria, $\times 20$. The arrangement of the zooecia in quincunx and the large auriculated vibracula are characteristic.
11. View of dorsal side, $\times 20$, showing small hydrostatic tuberosities.
12. A zoarium, $\times 20$, with smaller vibracula than usual.
13. Dorsal side, $\times 20$. The ribs are uncalcified and the interior is filled with a mealy powder.
14. Dorsal side, $\times 20$, showing the hollow radial ribs.
Middle Jacksonian: Baldeck, Barnwell County, South Carolina.
Cat. No. 63876, U.S.N.M.
- FIGS. 15-17. *Hincksina smithi*, new species (p. 113).
15. Surface of the incrusting zoarium, $\times 20$. Several zooecia are provided with ovicells.
16. Another portion of the same zoarium, $\times 20$, where the spines are especially well developed. Several ovicelled zooecia are present.
17. A third portion of the type, $\times 20$, exhibiting the normal features.
Middle Jacksonian: Eutaw Springs, South Carolina.
Cat. No. 63877, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 22.

FIGS. 1-3, *Hincksina reptans*, new species (p. 112).¹

1. Surface of the incrusting zoarium, $\times 20$. The irregular development of the spines and the small ovicells on some zooecia are to be noted.
2. Another portion of the same zoarium, $\times 20$, with avicularian zooecia in the place of the primoseriate ones.
3. A small fragment, $\times 20$, preserving the spines more clearly than usual.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63878, U.S.N.M.

FIGS. 4-9, *Hincksina jacksonia* Cunn and Bassler, 1917 (p. 113).

4. Four fragments of the bilamellar zoarium, natural size.
5. Surface of zoarium, $\times 20$, with short zooecia.
6. Another fragment, $\times 20$, exhibiting long zooecia.
7. A zoarium, $\times 20$, with avicularian zooecia in the place of primoseriate ones.
8. Surface, $\times 20$, showing avicularian zooecia and several zooecia with ovicells.
9. A normal zoarium, $\times 20$, with the ovicell on some of the zooecia.

Middle Jacksonian: Rich Hill, Crawford County, Georgia.
Cat. No. 62573, U.S.N.M.

FIGS. 10-13, *Hincksina ocalaensis*, new species (p. 114).

10. Well preserved portion of the incrusting zoarium, $\times 20$. The ancestrula and the neighboring small zooecia are seen.
11. Normal zooecia, $\times 20$.
12. Surface of a zoarium, $\times 20$, preserving an avicularian zooecium and zooecia with mural rim much enlarged at the base.

Upper Jacksonian (Ocala limestone): 7 miles above Rainbridge, Georgia.
Cat. No. 63879, U.S.N.M.

13. A zoarium, $\times 20$, with calcified zooecia, doubtfully referred to this species.

Vicksburgian (Byram marl): Byram, Mississippi.
Cat. No. 63880, U.S.N.M.

FIGS. 14-15, *Hincksina parricularia*, new species (p. 115).

14. The incrusting zoarium, $\times 20$. The numerous spines and the small interzooecial avicularia are characteristic.
15. Surface of another zoarium, $\times 20$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63881, U.S.N.M.

¹ For other species of *Hincksina*, see pl. 21, figs. 15-17 (*Hincksina smithi*); pl. 23, fig. 1 (*Hincksina megavicularia*); and pl. 23, figs. 2-5 (*Hincksina costulifera*).

PLATE 23.

FIG. 1. *Hincksina megaricularia* Canu and Bassler, 1917 (p. 116).

Surface of the incrusting type-specimen, $\times 20$. Two of the large interzooecial avicularia are present at the lower edge of the figure.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 62574, U.S.N.M.

FIGS. 2-5. *Hincksina costulifera*, new species (p. 116).

2. Surface of the incrusting zoarium, $\times 20$, with the spines coalesced on several zooecia.

3. A small zoarium, $\times 20$.

4. Another zoarium, $\times 20$, in which many of the zooecia have a small canal in the distal part of the mural rim.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 63882, U.S.N.M.

5. A variety or closely related species, $\times 20$, with the ovicell preserved on one zooecium.

Vicksburgian ("Chimney Rock" division of Marianna limestone): 1 mile north of Monroeville, Alabama.

Cat. No. 63883, U.S.N.M.

FIGS. 6-7. *Ogivalina crinipora* Canu and Bassler, 1917 (p. 118).

6. Surface of the incrusting zoarium, $\times 20$, exhibiting the general characters of the species.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 63884, U.S.N.M.

7. Small portion of another example, $\times 20$, preserving several endozooecial ovicells and the granular cryptocyst.

Middle Jacksonian: Rich Hill, Crawford County, Georgia.

Cat. No. 62875, U.S.N.M.

FIG. 8. *Ogivalina elongata*, new species (p. 118).

Surface of the incrusting type-specimen, $\times 20$, showing in addition to the usual features of the species, ovicelled and regenerated zooecia and some zooecia with granular cryptocyst.

Middle Jacksonian: Near Lenuds Ferry, South Carolina.

Cat. No. 63885, U.S.N.M.

FIGS. 9, 10. *Ogivalina elongata minor*, new variety (p. 119).

9. Portion of incrusting zoarium, $\times 20$.

10. Another zoarium, $\times 20$, exhibiting more regular growth and better development of the cryptocyst.

Middle Jacksonian: Near Lenuds Ferry, South Carolina.

Cat. No. 63886, U.S.N.M.

FIGS. 11-14. *Membreudocium pyriforme* Canu and Bassler, 1917 (p. 123).

11. Portion of the incrusting zoarium, $\times 20$, exhibiting the pyriform shape of the zooecia, the position of the avicularia and the very small ovicell.

12. Another zoarium, $\times 20$, showing broad zooecia.

13. Zooecia, $\times 20$, more widely separated than usual and with a convex gymnocyst.

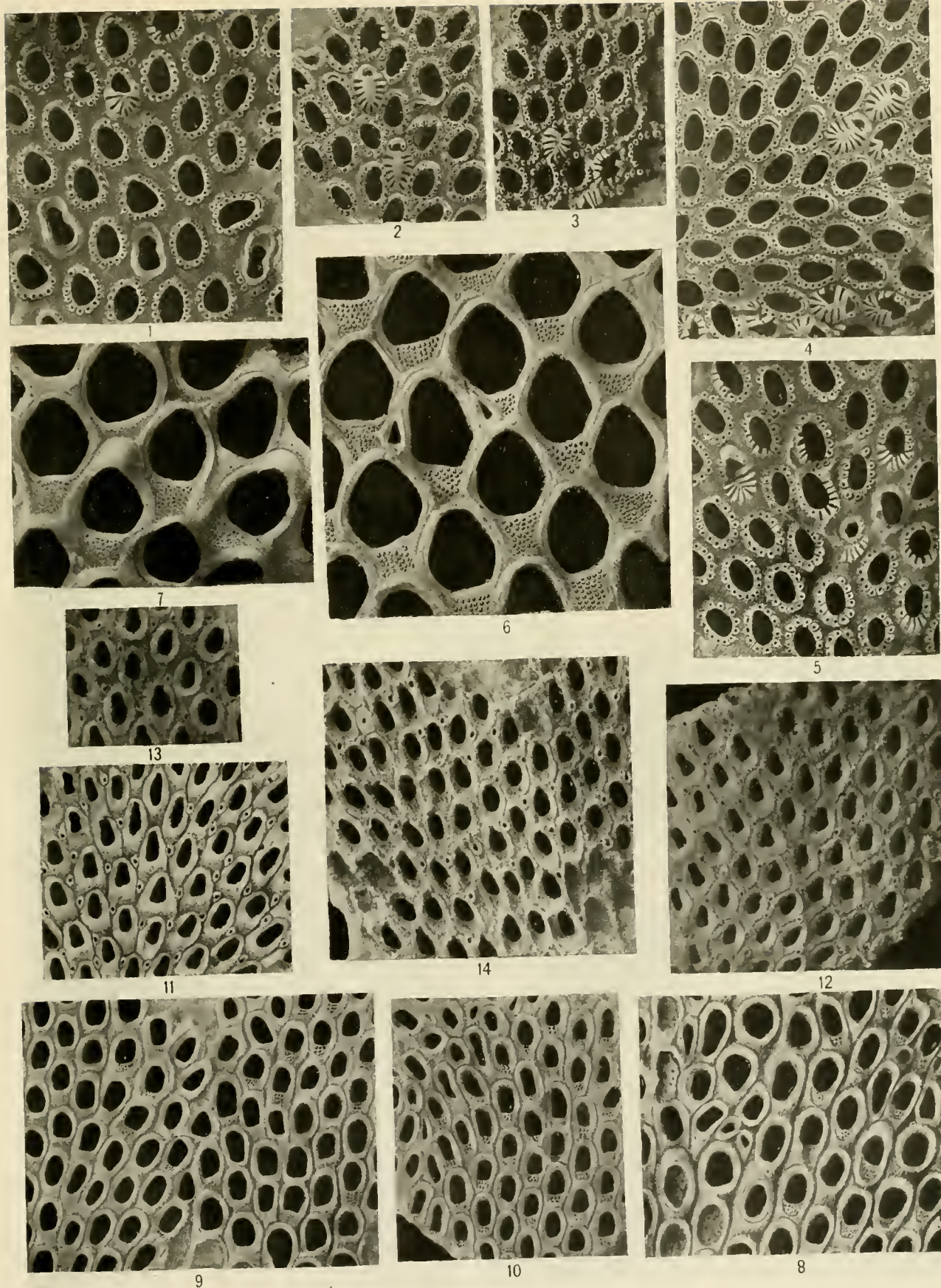
Middle Jacksonian: Near Lenuds Ferry, South Carolina.

Cat. No. 63887, U.S.N.M.

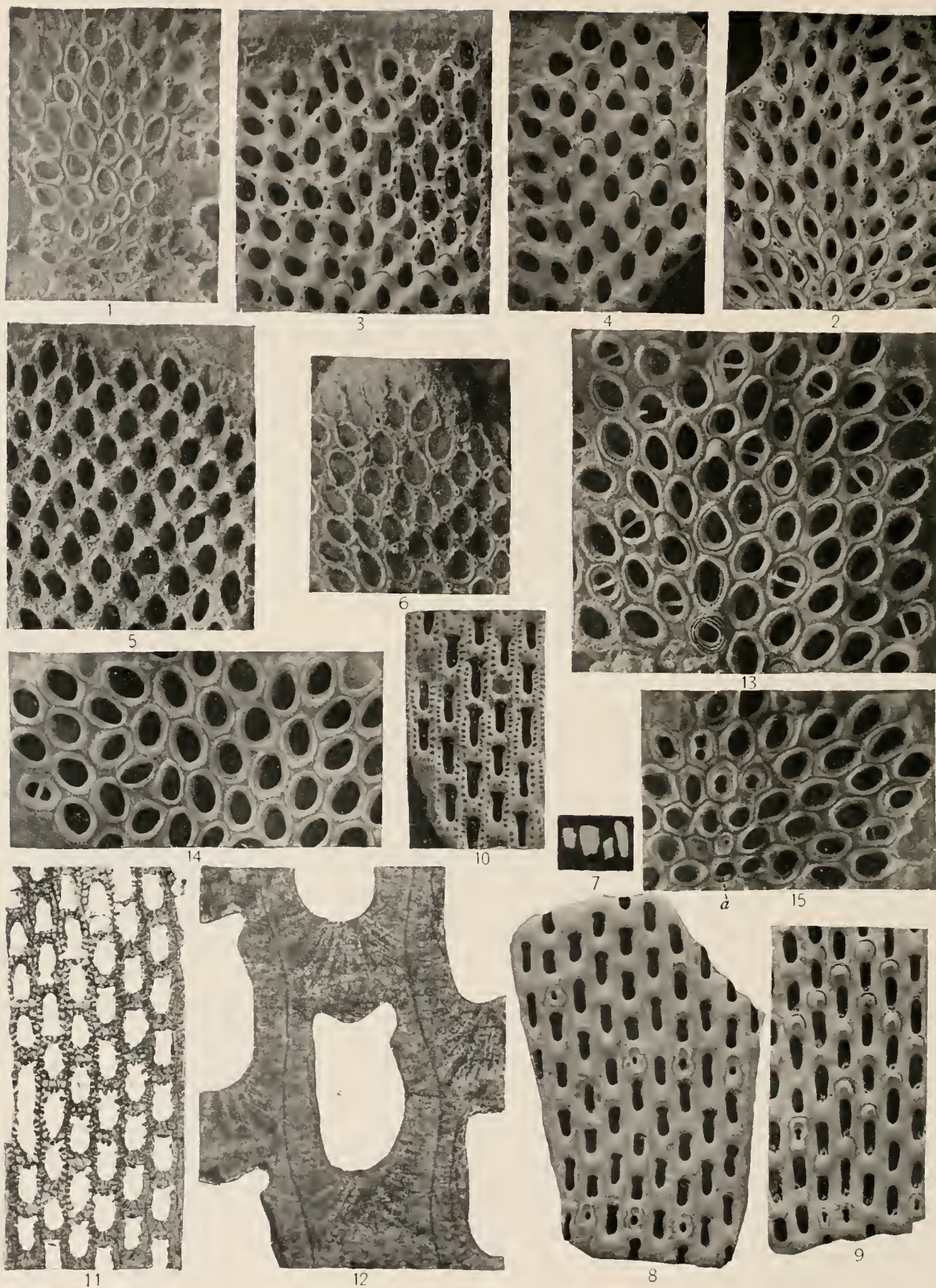
14. Surface of a specimen, $\times 20$, in which the cryptocyst is well developed, and the zooecia are narrow.

Vicksburgian (Marianna limestone): Claiborne, Monroe County, Alabama.

Cat. No. 63888, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 24

FIGS. 1-6. *Membrendocium duplex*, new species (p. 120).

1. The incrusting zoarium, $\times 20$, showing zooecia with distinct mural rims and avicularia.
2. Portion of the incrusting zoarium, $\times 20$, exhibiting zooecia at the bottom with thin and distinct mural rims and the others thick and confluent.
Upper Jacksonian (Ocala limestone): near Bainbridge, Georgia.
Cat. No. 63889, U.S.N.M.
3. Surface of zooecia, $\times 20$, exhibiting dietellae on the zooecia with thick mural rims and ovicells.
4. Another zoarium, $\times 20$, with thick walls and ovicells developed
Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Florida.
Cat. No. 63890, U.S.N.M.
5. A specimen, $\times 20$, with the surface altered chemically.
Upper Jacksonian (Ocala limestone): Bainbridge, Georgia.
Cat. No. 63891, U.S.N.M.
6. An example, $\times 20$, showing thin mural rim and well marked avicularia.
Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 63892, U.S.N.M.

FIGS. 7-12. *Periporoscella tantilla* Cunn and Bassler, 1917 (p. 125).

7. Four fragments of the bilamellar zoarium, natural size.
8. Surface of fragment, $\times 20$, showing the rectangular indistinct zooecia, with broad, flat mural rim and the avicularia.
9. Portion of another zoarium, $\times 20$, with ovicells developed. The opening of the large distal septula is visible at the base of the superior zooecium.
10. The abraded surface, $\times 20$, exhibiting the dietellae arranged entirely around each zooecium.
11. Tangential thin section, $\times 20$, exhibiting the numerous dietellae.
12. Tangential thin section, $\times 100$, passing through the mural rim and exhibiting the radially arranged olocystal elements.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 62577, U.S.N.M.

FIGS. 13-15. *Grammella crassimarginata* Hincks, 1880 (p. 131).

13. The incrusting zoarium, $\times 20$, well preserved and exhibiting total regeneration of the zooecia manifested by the double rim. Near the base of the figure is a zooecium showing triple regeneration.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63893, U.S.N.M.
14. The usual aspect of the species, $\times 20$, when avicularia are little developed.
15. The ancestrula (*a*) and surrounding zooecia, $\times 20$.
Upper Jacksonian (Ocala limestone): 9 miles north of Ocala, Florida.
Cat. No. 63894, U.S.N.M.

PLATE 25.

FIGS. 1, 2. *Ellisina lara* Camm and Bassler, 1917 (p. 128).

1. The incrusting zoarium, natural size, growing upon a shell.
 2. Surface of the same, $\times 20$, exhibiting the large zooecia, thin mural rim and triangular avicularium. The openings of the diatellae are shown on some of the zooecia.
- Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 62580, U.S.N.M.

FIG. 3. *Ellisina profunda* MacGillivray, 1895 (p. 129).

- Surface of the incrusting zoarium, $\times 20$, referred to this species
- Middle Jacksonian: near Lenuds Ferry, South Carolina.

Cat. No. 63895, U.S.N.M.

FIGS. 4-6. *Ellisina brevis*, new species (p. 128).

4. The incrusting zoarium, $\times 20$, with one zooecium exhibiting an ovicell.
 5. Another example, $\times 20$, showing the usual characters of the species.
- Middle Jacksonian: near Lenuds Ferry, South Carolina.

Cat. No. 63896, U.S.N.M.

6. A specimen, $\times 20$, with some of the zooecia preserving septulae.
- Middle Jacksonian: Eutaw Springs, South Carolina.

Cat. No. 63897, U.S.N.M.

FIGS. 7, 8. *Grammella transversa* Camm and Bassler, 1917 (p. 132).

7. Portion of the incrusting zoarium, $\times 20$, with the specific characters, the large transverse avicularium and the opesum bounded by the termen itself of the mural rim, developed.

8. Another example, $\times 20$, in which several of the avicularia are triangular in outline.
- Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 62579, U.S.N.M.

FIGS. 9-13. *Grammella pusilla*, new species (p. 132).

9. Two of the incrusting zoaria, natural size.
10. Surface, $\times 20$, preserving the ancestrula.
11. Another zoarium, $\times 20$, exhibiting the avicularium larger than the opesum. The ovicells are broken.
12. An almost entire zoarium, $\times 20$, with ancestrula, ordinary and ovicelled zooecia and avicularia.

Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.

Cat. No. 63898, U.S.N.M.

13. A specimen, $\times 20$, with thick mural rims and a calcified zooecium.

Upper Jacksonian (Ocala limestone): $1\frac{1}{2}$ miles above Bainbridge, Georgia.

Cat. No. 63899, U.S.N.M.

FIGS. 14, 15. *Membraniporida tricornuta*, new species (p. 134).

14. Well preserved surface of the unilamellar zoarium, $\times 20$. The finely granulated mural rim and denticulated opesum are shown. There are three, undeformed primoserial zooecia.

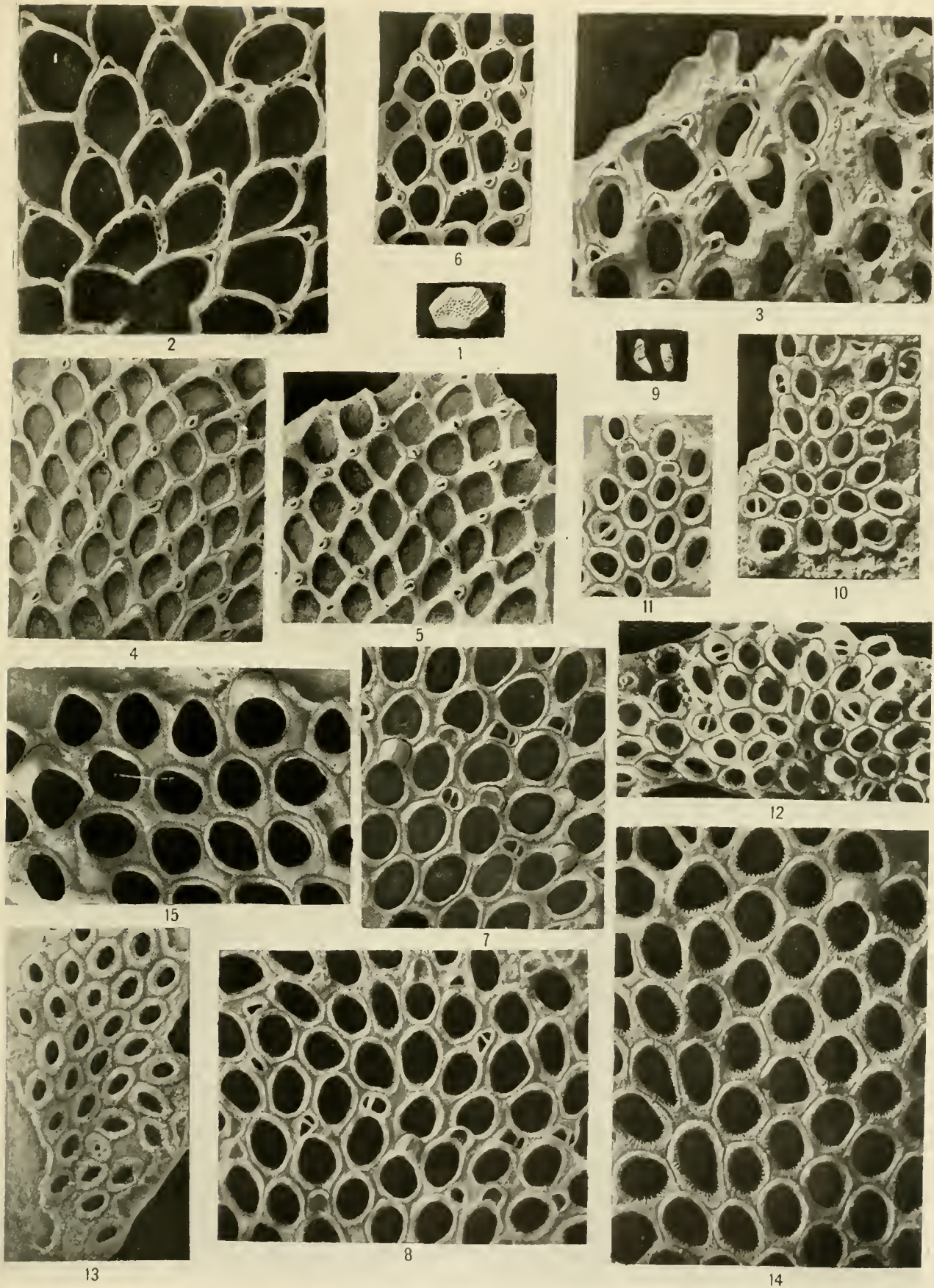
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 63900, U.S.N.M.

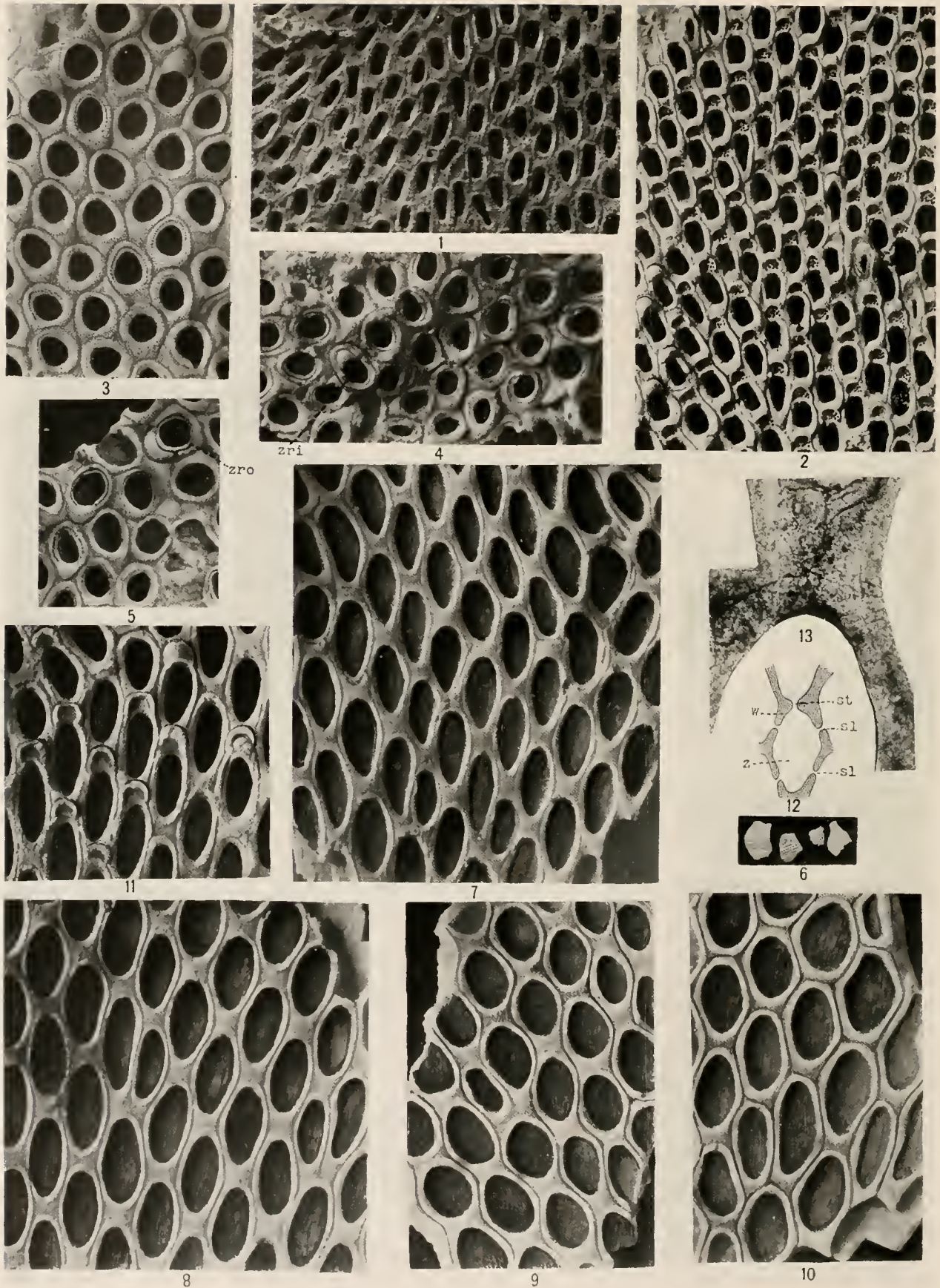
15. An example, $\times 20$, with broad zooecia. The ovicell is broken, showing that it is hyperstomial.

Middle Jacksonian: Rich Hill Crawford County, Georgia.

Cat. No. 63901, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA. I

PLATE 26.

FIGS. 1, 2. *Membraniporidra occioporosa*, new species (p. 133).

1. Surface of the incrusting zoarium, $\times 20$, exhibiting the elongated zooecia, without ovicells.

Lower Jacksonian (Moodys marl): Jackson, Mississippi.

Cat. No. 63902, U.S.N.M.

2. Zooecia, $\times 20$, with ovicells. The broken ovicells show the finely porous walls. Several calcified zooecia are present.

Middle Jacksonian: Rich Hill, Crawford County, Georgia.

Cat. No. 63903, U.S.N.M.

FIGS. 3-5. *Membraniporidra laticella*, new species (p. 135).

3. The incrusting zoarium, $\times 20$. The zooecia have a convex gymnocyst and several of them show total regeneration.

4. Another zoarium, $\times 20$, with numerous cases of regeneration. *zri* represents a regenerated zooecium replacing a normal one inversely.

5. Surface, $\times 20$, illustrating a case of regeneration in which an ovicelled zooecium succeeds a normal one (*vro*).

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 63904, U.S.N.M.

FIGS. 6-13. *Membraniporidra porrecta* Canu and Bassler, 1917 (p. 135).

6. Four fragments of the free, bifoliate zoarium, natural size.

7. Surface of zooecia, $\times 20$, exhibiting both elongate and dwarfed zooecia.

8. Another zoarium, $\times 20$, with the usual characters of the species.

- 9, 10. Two fragments, $\times 20$, showing variations in the width of the zooecia.

11. A zoarium with ovicelled zooecia, $\times 20$. The separating furrow is replaced in some case by a thread like projection.

12. Sketch of a tangential section through a zooecium, $\times 20$. *sl*, lateral septula; *st*, terminal septula; *w*, zooecial wall; *z*, zooecium.

13. Tangential thin section through the mural rim and the gymnocyst, $\times 100$.

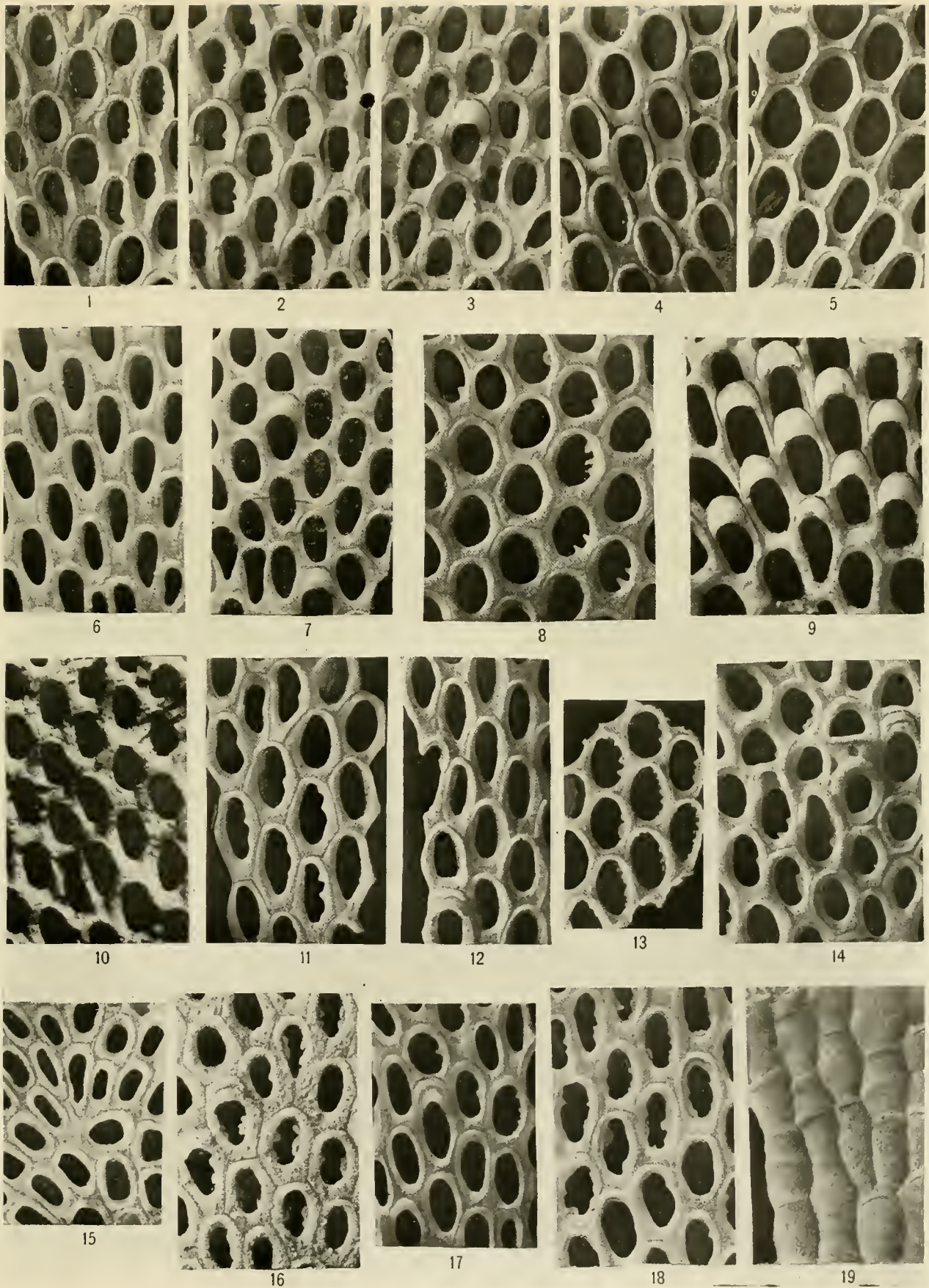
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 62578, U.S.N.M.

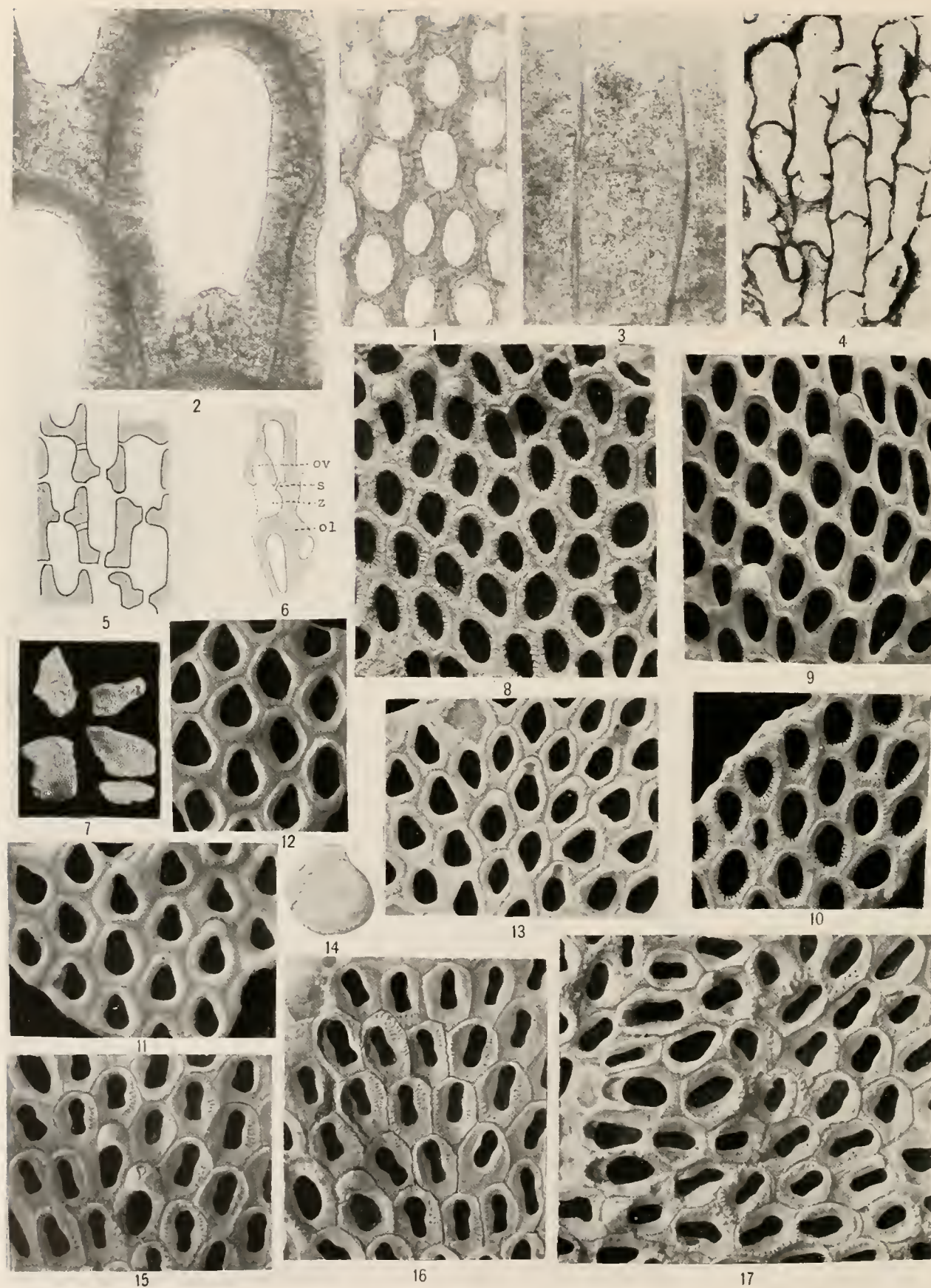
PLATE 27.

FIGS. 1-19. *Membraniporidra spissimuralis*, new species (p. 136). (See also pl. 28, figs. 1-7.)

- 1, 2. Surface of the bifoliate zoarium, $\times 20$, showing the most perfect, but less common form of the species.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63905, U.S.N.M.
3. Zooecia, $\times 20$, one with smooth ovicell.
Middle Jacksonian: Rich Hill, Crawford County, Georgia.
Cat. No. 63906, U.S.N.M.
4. Zooecia, $\times 20$, with the cryptocyst lacking the lateral groove.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63905, U.S.N.M.
5. Zooecia, $\times 20$, exhibiting a concave cryptocyst.
Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.
Cat. No. 63907, U.S.N.M.
6. Zooecia, $\times 20$, with convex cryptocyst.
7. The same variation as figure 6, $\times 20$, with ovicells.
Middle Jacksonian: $3\frac{1}{4}$ miles south of Perry, Georgia.
Cat. No. 63908, U.S.N.M.
8. Surface of a zoarium, $\times 20$, in which the cryptocyst is wanting and the lateral denticles are developed.
Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.
Cat. No. 63907, U.S.N.M.
9. A fragment, $\times 20$, with most of the zooecia supplied with ovicells.
10. Aspect of a weathered zoarium, $\times 20$.
Middle Jacksonian: Rich Hill, Crawford County, Georgia.
Cat. No. 63906, U.S.N.M.
11. An example, $\times 20$, showing zooecia with thin mural rim.
12. Fragment, $\times 20$, with the ovicells exhibiting the callosity developed in the Vicksburgian specimens.
13. Young zooecia, $\times 20$, with denticles developed.
Vicksburgian (Glendon member of Marianna limestone): West bank Conecuh River, Escambia County, Alabama.
Cat. No. 63909, U.S.N.M.
14. An example, $\times 20$, with monstrous zooecia and a regenerated zooecium.
Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.
Cat. No. 63907, U.S.N.M.
15. A fragment, $\times 20$, with a zooecium giving rise to five primoserial zooecia.
Middle Jacksonian: Rich Hill, Crawford County, Georgia.
Cat. No. 63906, U.S.N.M.
16. Surface, $\times 20$, with the granulations of the mural rim enlarged by chemical action. The ovicell is ornamented with a frontal callosity.
Vicksburgian (Marianna limestone): near Claiborne, Monroe County, Alabama.
Cat. No. 63910, U.S.N.M.
17. A variation of the Vicksburgian variety, $\times 20$, showing the frontal callosity of the ovicell.
18. Another aspect of the zoarium, $\times 20$, with very large lateral opesia denticles.
Vicksburgian (Marianna limestone): Salt Mountain, five miles south of Jackson, Alabama.
Cat. No. 63911, U.S.N.M.
19. Dorsal side of a unilamellar zoarium, $\times 20$.
Vicksburgian (Glendon member of Marianna limestone): West bank, Conecuh River, Escambia County, Alabama.
Cat. No. 63909, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 28.

Figs. 1-7. *Membraniporidra spissimuralis*, new species (p. 136). (See also pl. 27.)

1. Tangential thin section, $\times 20$.
2. A portion of the same, $\times 100$, showing the mural rim and cryptocyst formed of an olocyst with elements grouped in radial lines.
3. Tangential thin section of the dorsal wall, $\times 100$, formed of an olocyst with scattered elements.
4. Tangential thin section, $\times 20$, exhibiting the thin zooecial wall.
5. Sketch of tangential section, $\times 20$, through thick zooecial walls, showing lateral and distal septulae.
6. Sketch of vertical section, $\times 20$, through an ovicelled zooecium. *ol*, olocyst; *or*, ovicell; *s*, septula; *z*, zooecium.
7. Fragments of the bifoliate zoarium, natural size.
Vicksburgian (Marianna limestone): Salt Mountain, five miles south of Jackson, Alabama.

Cat. No. 63911, U.S.N.M.

Figs. 8-10. *Membraniporidra similis*, new species (p. 137).

8. Surface of the incrusting zoarium, $\times 20$, showing the finely granular mural rim and the crenulated opesium.
Upper Jacksonian (Ocala limestone): Old Factory, near Bainbridge, Georgia.
Cat. No. 63912, U.S.N.M.
9. Another example, $\times 20$, with several zooecia preserving ovicells.
Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 63913, U.S.N.M.

10. Surface of a small fragment, $\times 20$. An interzooecial avicularium is shown and the crenulations of the opesium are well marked.

Middle Jacksonian: Near Lenns Ferry, South Carolina.

Cat. No. 63914, U.S.N.M.

Figs. 11-13. *Membraniporidra pyriformis*, new species (p. 138).

11. A small fragment of the incrusting zoarium, $\times 20$. The pyriform shape of the opesium and the small ovicell are to be observed.
12. Another small fragment, $\times 20$, exhibiting the thick walls of the mural rim.
Upper Jacksonian (Ocala limestone): Chipola River east of Marianna, Florida.

Cat. No. 63915, U.S.N.M.

13. Surface, $\times 20$, slightly altered by fossilization.

Upper Jacksonian (Ocala limestone): Bainbridge, Georgia.

Cat. No. 63916, U.S.N.M.

Figs. 14-17. *Membraniporidra pachymuralis*, new species (p. 134).

14. The type-specimen, natural size, incrusting a Peeten.
15. A portion of the type, $\times 20$, with several ovicelled zooecia. The two component layers of the ovicell are visible.
16. More regular zooecia of the same zoarium, $\times 20$. The very wide mural rim with radially arranged granules may be noted.
17. Another portion of the type, $\times 20$, with zooecia irregularly arranged.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 63917, U.S.N.M.

PLATE 29.

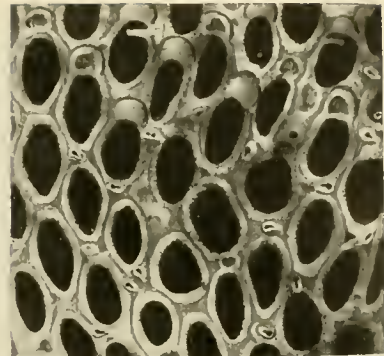
- FIG. 1. *Alderina pulcherrima*, new species (p. 144).
Surface of this beautiful unilamellar species, $\times 20$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63918, U.S.N.M.
- FIG. 2. *Callopora aurila* Hincks, 1877 (p. 152).
A small tubular zoarium, $\times 20$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63919, U.S.N.M.
- FIG. 3. *Callopora ingens*, new species (p. 150).
The incrusting type example, $\times 20$.
Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 63920, U.S.N.M.
- FIG. 4. *Callopora filoparictis*, new species (p. 150).
A portion of the incrusting type-specimen, $\times 20$; the thin walls and the very pointed avicularia are quite visible.
Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 63921, U.S.N.M.
- FIG. 5. *Alderina lunata*, new species (p. 144).
The incrusting type-specimen, $\times 20$. The lunate form of the frontal area of the ovicell is characteristic.
Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 63922, U.S.N.M.
- FIG. 6. *Callopora dumerilii lutea*, new variety (p. 149).
The incrusting type-specimen of this new variety, $\times 20$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63923, U.S.N.M.
- FIG. 7. *Alderina crassa*, new species (p. 145).
Portion of the incrusting type, $\times 20$. Several zooecia exhibit broken ovicells, while others show a double and even a triple mural rim resulting from regeneration.
Middle Jacksonian: Eutaw Springs, South Carolina.
Cat. No. 63924, U.S.N.M.
- FIG. 8. *Callopora concava*, new species (p. 150).
The small unilamellar type, $\times 20$. The very convex form of the zooecia and the gymnocyst are characteristic.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63925, U.S.N.M.
- FIG. 9. *Callopora crassospina*, new species (p. 150).
The incrusting type-specimen, $\times 20$, exhibiting the spines of the mural rim and the large transversal avicularium.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63926, U.S.N.M.
- FIGS. 10-11. *Callopora tenuirostris* Hincks, 1880 (p. 154).
10. The incrusting zoarium, $\times 20$, with numerous ovicelled zooecia showing the frontal callosity and with the characteristic pointed avicularia.
11. Another zoarium, $\times 20$, representing the aspect in the vicinity of the ancestrula.
Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 63927, U.S.N.M.
- FIG. 12. *Callopora mundula*, new species (p. 156).
Surface of the free bilamellar zoarium, $\times 20$. The large frontal avicularia and the ovicells, although broken, are prominent features.
Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 63928, U.S.N.M.
- FIGS. 13, 14. *Amphiblestrum biporosum*, new species (p. 159).
13. A part of the incrusting type zoarium, $\times 20$. The round avicularia and the trifoliate opesium are characteristic.
14. Another portion of the type, $\times 20$, exhibiting slight differences.
Middle Jacksonian: near Lenud's Ferry, South Carolina.
Cat. No. 63929, U.S.N.M.
- FIG. 15. *Amphiblestrum flammicum*, new species (p. 160).
Surface of the incrusting type-specimen, $\times 20$. The elongate avicularia are quite characteristic.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63930, U.S.N.M.



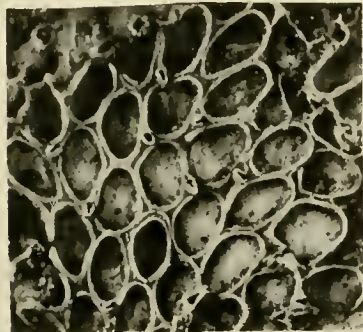
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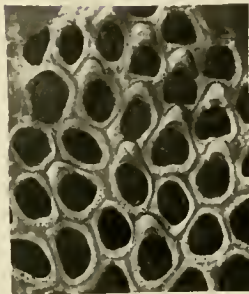
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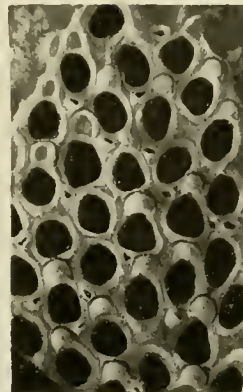
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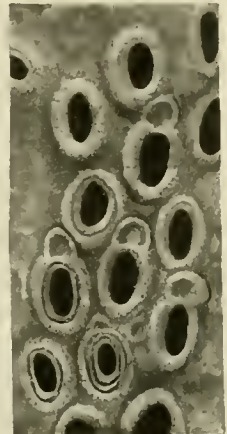
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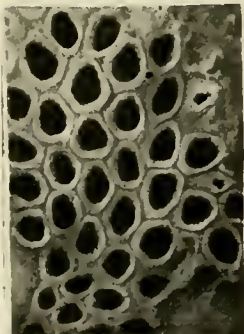
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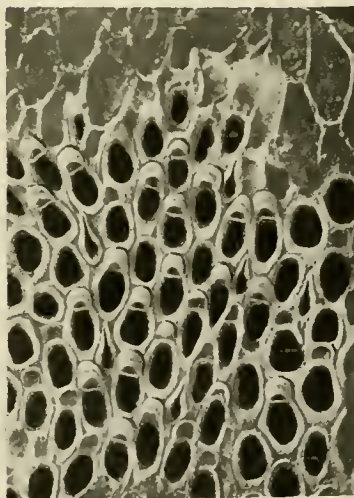
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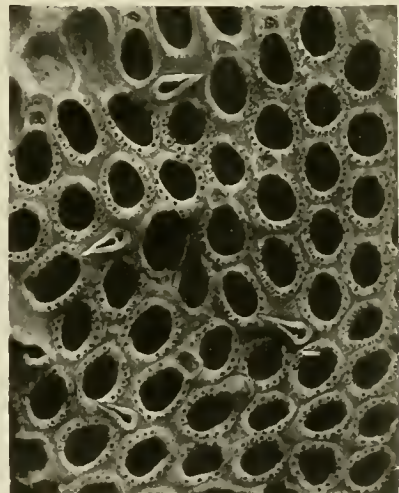
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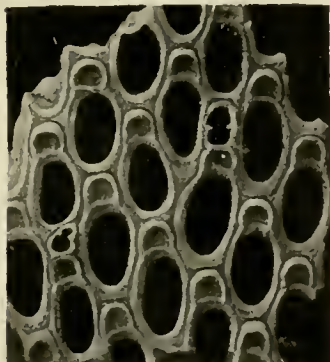
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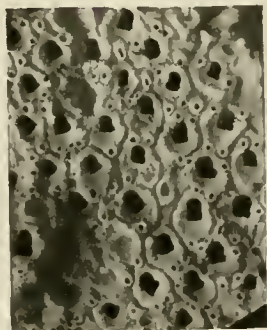
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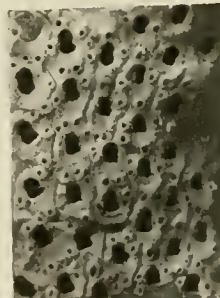
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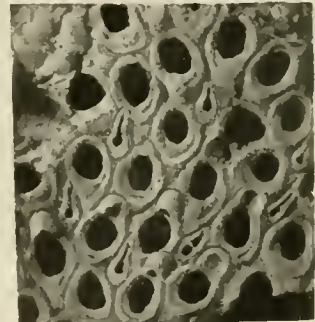
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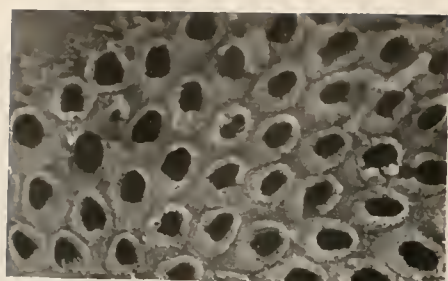
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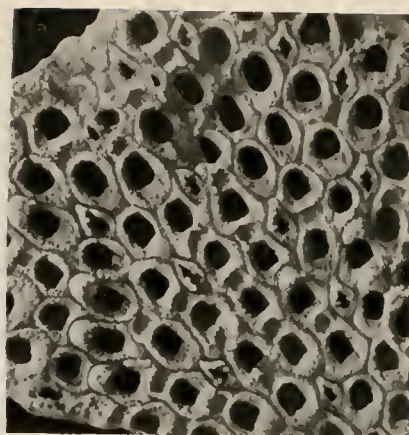
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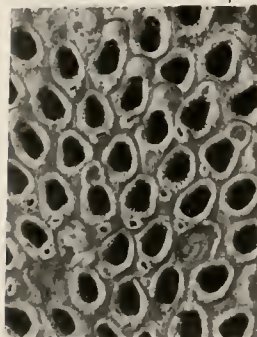
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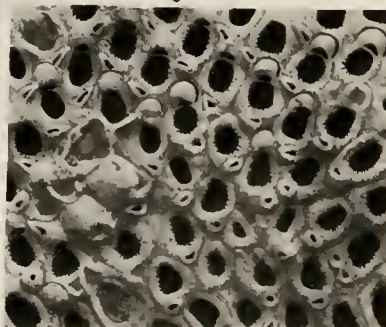
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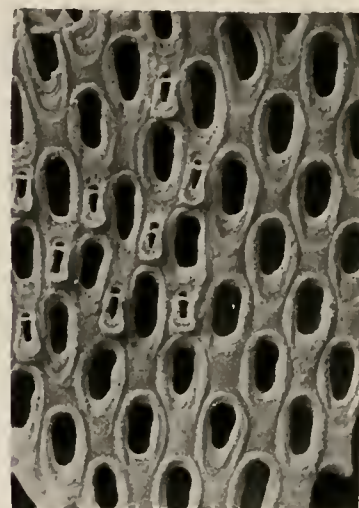
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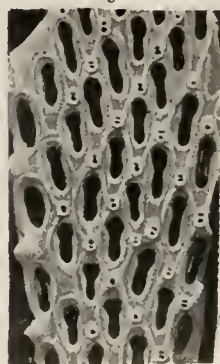
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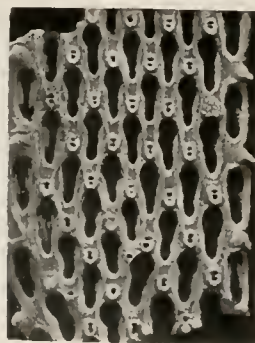
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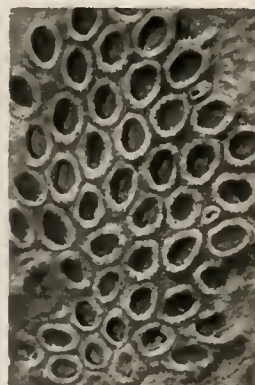
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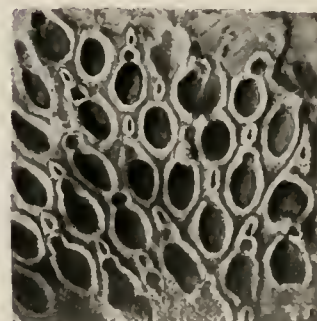
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11

JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 30.

Figs. 1-3. *Amphiblestrum patens*, new species (p. 160).

1. An incrusting zoarium, $\times 20$, preserving many ovicells and avicularia.
 2. A specimen, $\times 20$, showing region of the ancestrula.
 3. Another example, $\times 20$, in which chemical alteration of the surface has occurred.
- Upper Jacksonian (Ocala limestone); Old Factory, near Bainbridge, Georgia.
Cat. No. 63931, U.S.N.M.

FIG. 4. *Amphiblestrum orbiculatum*, new species (p. 161).

- The incrusting type-specimen of this unusual species, $\times 20$.
Upper Jacksonian (Ocala limestone); Old Factory, near Bainbridge, Georgia.
Cat. No. 63932, U.S.N.M.

FIG. 5. *Ramphonotus haccutus*, new species (p. 165).

- The incrusting type-specimen, $\times 20$, showing area about ancestrula.
Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 63933, U.S.N.M.

Figs. 6-8. *Ramphonotus regularis*, new species (p. 165).

6. The usual aspect of this incrusting species, $\times 20$.
 7. Region of the ancestrula, $\times 20$, of the same specimen.
 8. Another zoarium, $\times 20$. The avicularia are unusually large.
- Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 63934, U.S.N.M.

Figs. 9, 10. *Tegella nicklesi*, new species (p. 167).

9. Area of the ancestrula of the incrusting zoarium, $\times 20$, where the zooecia lack the distal avicularium.
 10. The normal aspect of this incrusting species, $\times 20$. The characteristic elongated avicularium surmounting the ovicell is plainly visible.
- Middle Jacksonian: Eutaw Springs, South Carolina.
Cat. No. 63935, U.S.N.M.

FIG. 11. *Tegella aculeata*, new species (p. 166).

- The incrusting type-specimen, $\times 20$. The structure of the zooecia, ovicells, and avicularia is well exhibited.
Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 63936, U.S.N.M.

FIG. 12. *Stamencella anatina*, new species (p. 169).

- Surface of the free bilamellar zoarium, $\times 20$, exhibiting the duckbill-like avicularia.
Lower Jacksonian (Moody's marl); Jackson, Mississippi.
Cat. No. 63937, U.S.N.M.

Figs. 13-16. *Stamencella pyriformis*, new species (p. 170).

13. Fragment of the bilamellar zoarium, $\times 20$, showing lateral zooecia with an elliptical opesia.
 14. A broader zoarium, $\times 20$, exhibiting pyriform opesia in the center and elliptical opesia along the sides. The lateral zooecia bear prominent claw-like avicularia.
 15. A narrow zoarium, $\times 20$, with ovicelled zooecia.
 16. Another specimen, $\times 20$, showing a slightly different aspect of the species.
- Lower Jacksonian (Moody's marl); Jackson, Mississippi.
Cat. No. 63938, U.S.N.M.

PLATE 31.

FIGS. 1-5. *Stamenuocella mediaviculifera* Camm and Bassler, 1917 (p. 171).

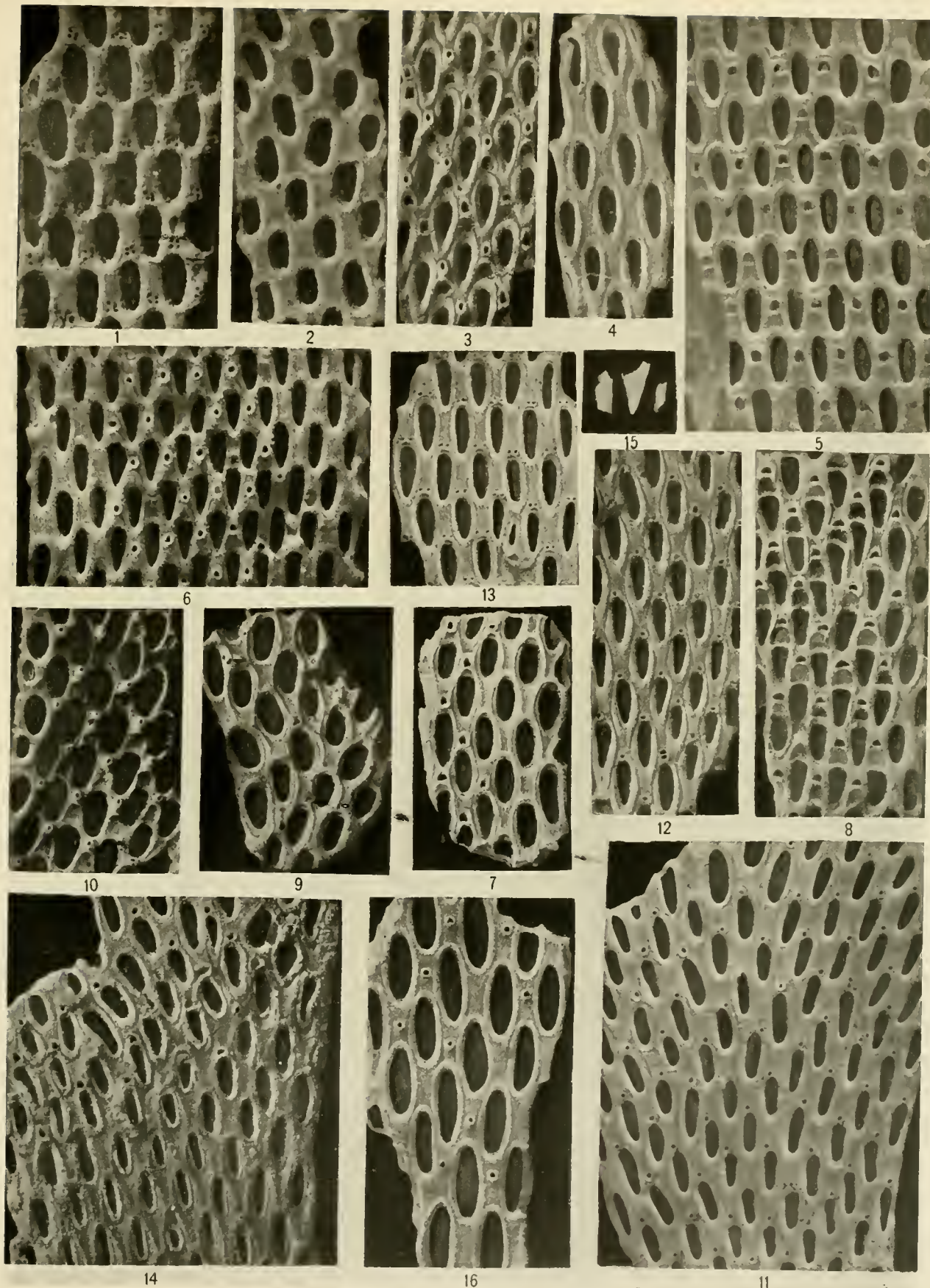
1. Portion of the bilamellar zoarium. $\times 20$, showing four punctations at the base of the gymnocyst.
2. A worn example, $\times 20$.
Middle Jacksonian: Rich Hill, Crawford County, Georgia.
Cat. No. 63939, U.S.N.M.
3. Surface of a fragment. $\times 20$, preserving both avicularia and ovicells, the latter invariably broken.
4. A fragment. $\times 20$, without ovicells or avicularia.
Middle Jacksonian: $3\frac{1}{2}$ miles south of Perry, Georgia.
Cat. No. 62581, U.S.N.M.
5. A broad specimen. $\times 20$, with surface abraded, doubtfully referred to this species.
Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.
Cat. No. 63940, U.S.N.M.

FIGS. 6-15. *Stamenuocella inferaviculifera*, new species (p. 172).

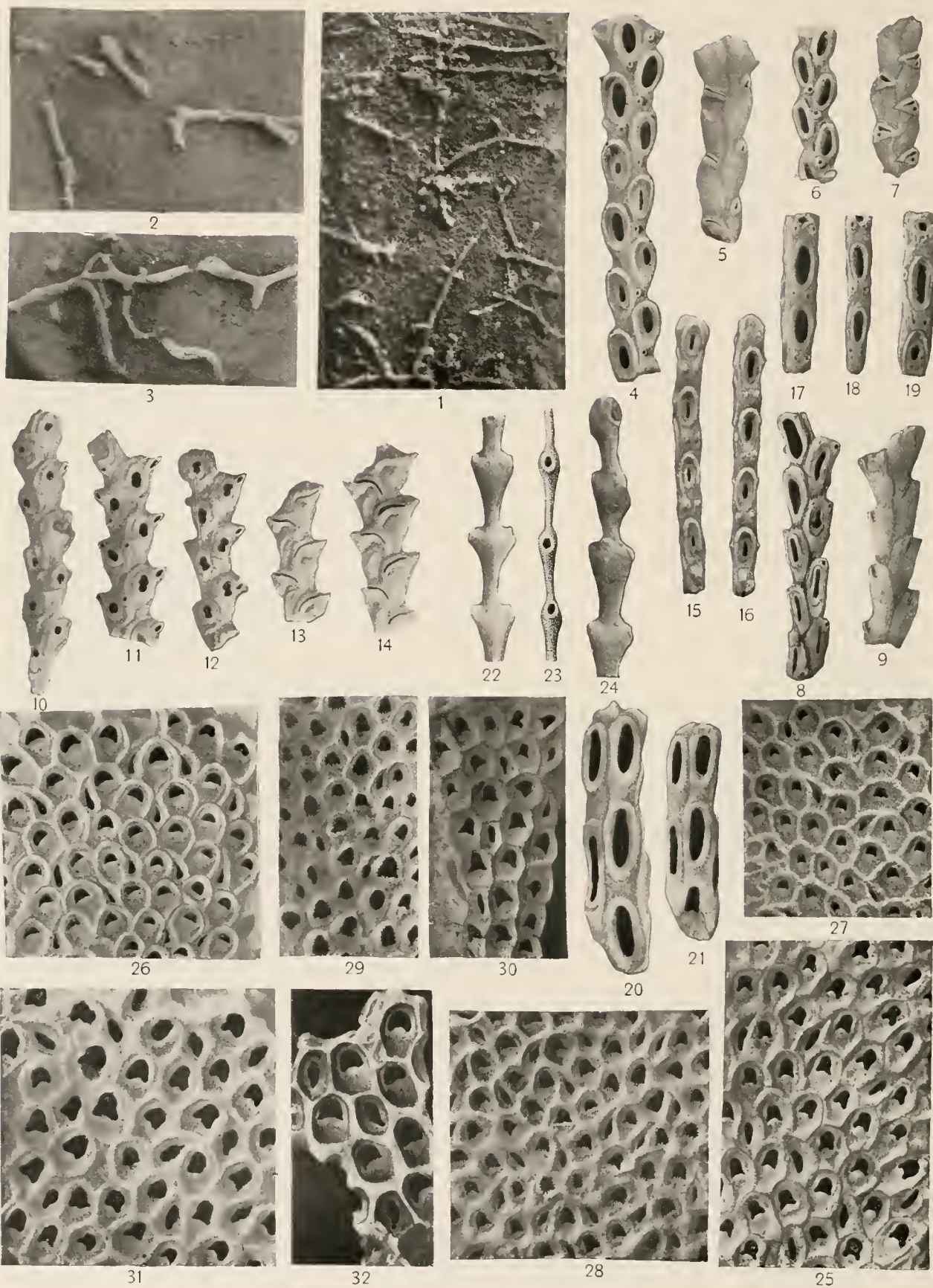
6. A broad example of the bilamellar zoarium $\times 20$. The ovicell and avicularium are developed on many of the zooecia.
Upper Jacksonian (Ocala limestone): Alachua, Florida.
Cat. No. 63941, U.S.N.M.
7. A small example, $\times 20$.
8. Surface of a fragment, $\times 20$, with avicularia and ovicells developed, the latter broken.
Vicksburgian (Marianna limestone): Murder Creek, east of Castlebury, Alabama.
Cat. No. 63942, U.S.N.M.
9. Fragmentary zoarium, $\times 20$.
Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.
Cat. No. 63943, U.S.N.M.
10. Surface of a zoarium, $\times 20$, showing the avicularium crowded close to the following opesium by the ovicell.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63944, U.S.N.M.
11. A broad zoarium, $\times 20$, exhibiting a variation of the species.
12. Normally arranged zooecia, $\times 20$, with small avicularia.
13. Another specimen, $\times 20$, in which the avicularia are replaced by punctations.
14. A well developed specimen, $\times 20$.
15. Group of zoaria, natural size.
Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.
Cat. No. 63945, U.S.N.M.

FIG. 16. *Stamenuocella grandis*, new species (p. 173).

- The type example of this bilamellar species, $\times 20$, showing the unusually large zooecia.
Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.
Cat. No. 63946, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



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- FIG. 1. *Actea truncata* Linsborough, 1852 (p. 180).
The Eocene specimen compared with this recent species, $\times 20$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63947, U.S.N.M.
- FIGS. 2, 3. *Actea anguina* Linneaus (p. 179).
2. The creeping portion of the zooecia, $\times 20$.
Upper Jacksonian (Ocala limestone): Bainbridge, Georgia.
Cat. No. 63948, U.S.N.M.
3. Another example, $\times 20$.
Upper Jacksonian (Ocala limestone): Ocala, Florida.
Cat. No. 63949, U.S.N.M.
- FIGS. 4-7. *Scrupocellaria elliptica* Reuss, 1869 (p. 184).
4. Frontal view of an almost complete segment, $\times 25$.
5. Dorsal side of another example, $\times 25$, exhibiting the dorsal vibracula.
Middle Jacksonian (Castle Hayne limestone), Wilmington, North Carolina.
Cat. No. 63950, U.S.N.M.
6, 7. Frontal and dorsal sides of two fragments, $\times 25$. On the dorsal a radicular pore is shown in addition to the vibraculum.
Middle Jacksonian: Near Lenuds Ferry, South Carolina.
Cat. No. 63951, U.S.N.M.
- FIGS. 8, 9. *Scrupocellaria gracilis* Reuss, 1869 (p. 185).
8. Portion of a segment, $\times 25$, with zooecia at its base that have undergone total regeneration.
9. Dorsal side of another segment, $\times 25$. The vibraculum is directed longitudinally.
Middle Jacksonian: Near Lenuds Ferry, South Carolina.
Cat. No. 63952, U.S.N.M.
- FIGS. 10-14. *Scrupocellaria dubia*, new species (p. 190).
10, 12. Frontal side of three segments, $\times 25$. The zooecia seem to be regenerated.
13, 14. Dorsal side of two segments, $\times 25$.
Middle Jacksonian: Near Lenuds Ferry, South Carolina.
Cat. No. 63953, U.S.N.M.
- FIGS. 15-19. *Nellia bifaciata*, new species (p. 197).
15, 16. Two incomplete segments, $\times 25$, showing ordinary zooecia changed into radicular ones.
Middle Jacksonian: Near Lenuds Ferry, South Carolina.
Cat. No. 63954, U.S.N.M.
17, 18, 19. Three fragmentary segments, $\times 25$. In figure 17 the broad zooecia of the zoarium are shown, while the narrow zooecia are illustrated in figure 18.
Vicksburgian (Byram marl): Byram, Mississippi.
Cat. No. 63955, U.S.N.M.
- FIGS. 20-21. *Nellia concatenata* Canu, 1907 (p. 197).
20, 21. Two examples, $\times 25$, of this large celled species.
Middle Jacksonian: One-half mile southeast of Georgia Kaolin Co. Mine, Twiggs County, Georgia.
Cat. No. 63956, U.S.N.M.
- FIGS. 22-24. *Gemcellaria prima* Reuss, 1866 (p. 200).
Front, side and dorsal view, $\times 25$, of this unique species.
Jacksonian (Zenglodon zone): Cocoa post office, Choctaw County, Alabama.
Cat. No. 63957, U.S.N.M.
- FIG. 25. *Onychocella celsa*, new species (p. 207).
The incrusting type-specimen, $\times 20$, showing the elongated opesium.
Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 63958, U.S.N.M.
- FIGS. 26, 27. *Onychocella laciniosa*, new species (p. 207).
26. The incrusting zoarium, $\times 20$, illustrating differences in size between marginal and ordinary zooecia and onychocellaria.
Middle Jacksonian: Near Lenuds Ferry, South Carolina.
Cat. No. 63959, U.S.N.M.
27. Ordinary zooecia and onychocellaria, $\times 20$, showing the opesicular indentations.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63960, U.S.N.M.
- FIGS. 28-30. *Onychocella dupliciter*, new species (p. 208).
28. The incrusting zoarium, $\times 20$, illustrating zooecia of similar size but with large and small sized opesia.
Middle Jacksonian: Eutaw Springs, South Carolina.
Cat. No. 63961, U.S.N.M.
29. Another zoarium, $\times 20$, showing the duplex character of the opesia very well.
Middle Jacksonian: Rich Hill, Crawford County, Georgia.
Cat. No. 63962, U.S.N.M.
30. Zooecia, $\times 20$, with opesicular indentation better developed than usual.
Upper Jacksonian (Ocala limestone): West bank of Sepulga River, Escambia County, Alabama.
Cat. No. 63963, U.S.N.M.
- FIGS. 31, 32. *Onychocella angulosa* Reuss, 1847 (p. 205).
31. Incrusting zoarium, $\times 20$, of this widespread species.
32. View of the interior of the frontal, $\times 20$. The opesium of the onychocellarium has a small proximal sinus.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63964, U.S.N.M.

PLATE 33.

FIGS. 1-3. *Rectonychoecella bilamellaria*, new species (p. 210).

1. The free, bilamellar zoarium, $\times 20$, showing the general symmetry of the zooecia and onychocellaria.
2. A narrow zoarium, $\times 20$, with long zooecia.
3. An example, $\times 20$, with broader zooecia and more distinct polypidial convexity.

Upper Jacksonian (Ocala limestone): West bank of Sepulga River, Escambia County, Alabama.

Cat. No. 63966, U.S.N.M.

FIGS. 4-6. *Rectonychoecella tenuis*, new species (p. 211).

4. The incrusting zoarium, $\times 20$, with one ovicelled zooecium (at the top of the figure). Jacksonian (Zenglodon zone): Cocoa post office, Choctaw County, South Carolina.

Cat. No. 63967, U.S.N.M.

5. The surface of zoarium, $\times 20$, showing zooecia without a polypidial convexity and onychocellaria with the point of the opesium directed to the top. The mural rim surrounding the zooecia is very thin.

6. Zooecia, $\times 20$, in the region of the ancestrula.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 63968, U.S.N.M.

FIGS. 7, 8. *Rectonychoecella elliptica*, new species (p. 212).

7. Surface of the incrusting zoarium, $\times 20$, showing a calcified zooecium.

Upper Jacksonian (Ocala limestone): Bainbridge, Georgia.

Cat. No. 63969, U.S.N.M.

8. Another example, $\times 20$, illustrating the characters of the species, especially the fusion of the distal canal of the onychocellarium with the cryptocyst of the distal zooecium.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Florida.

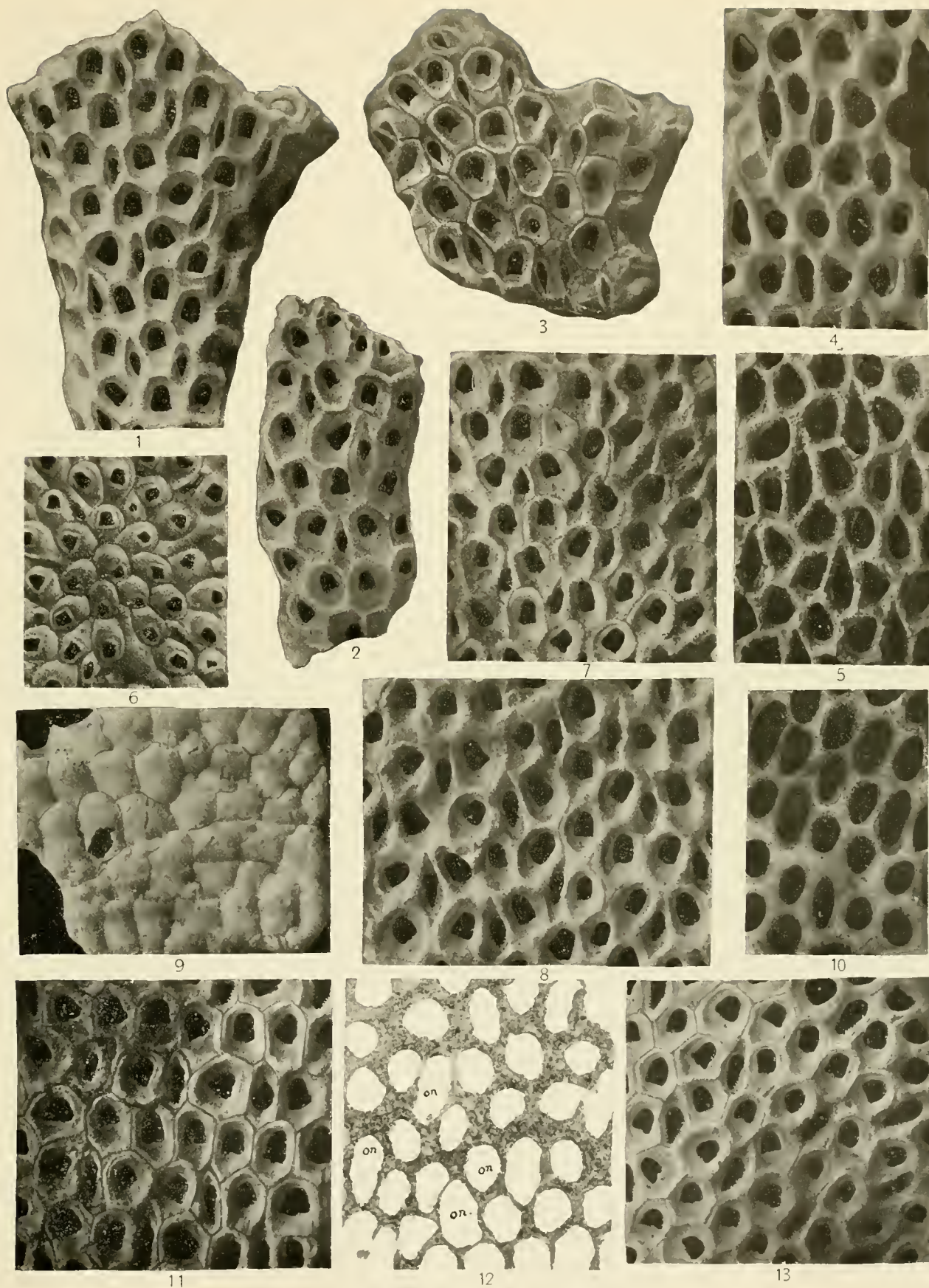
Cat. No. 63970, U.S.N.M.

FIGS. 9-13. *Rectonychoecella semiluna*, new species (p. 210).

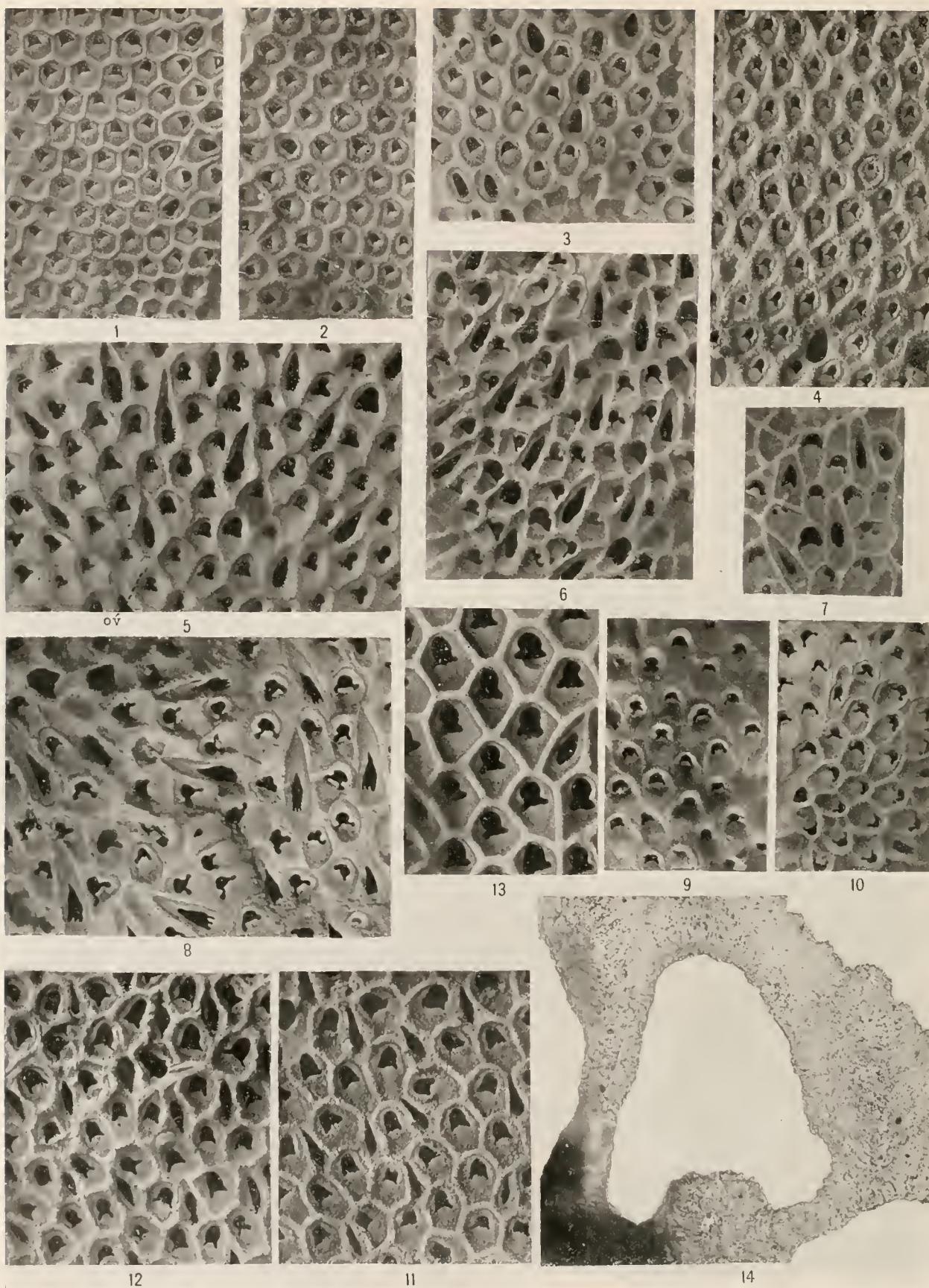
9. Under side of the free unilamellar zoarium, $\times 20$, exhibiting irregular, convex zooecia.
10. View of the interior of the frontal, $\times 20$. The great length of the onychocellarian opesia is shown.
11. Surface of zoarium, $\times 20$. The large opesium of the onychocellarium(on), characterizing the species, is visible.
12. Tangential thin section of the zooecial walls, $\times 20$, showing their vacuolar olocyst structure. The large size of the onychocellaria is also evident.
13. Another zoarium, $\times 20$, exhibiting zoaria with wider and also narrow opesia, due to different stages in calcification.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 63971, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 31.

FIGS. 1-3. *Tetumella lerigata*, new species (p. 211).

1. The incrusting zoarium, $\times 20$, illustrating the smooth cryptocyst, transverse opesium, and hexagonal onychocellaria characteristic of the species.
Upper Jacksonian (Ocala limestone): Nine miles north of Ocala, Florida.
Cat. No. 63972, U.S.N.M.
2. Another surface, $\times 20$, showing an especially thick mural rim.
Upper Jacksonian (Ocala limestone): Alachua, Florida.
Cat. No. 63973, U.S.N.M.
3. Portion of a zoarium, $\times 20$, with numerous onychocellaria.
Upper Jacksonian (Ocala limestone): West bank of Sepulga River, Escambia County, Florida.
Cat. No. 63974, U.S.N.M.

FIG. 4. *Tetumella plicata*, new species (p. 214).

- The incrusting type example, $\times 20$. The wrinkled polypidial convexity, elongate zooecial opesium and linear opesiules are characteristic. A regenerated zooecium may be observed near the center of the figure.
Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Florida.
Cat. No. 63975, U.S.N.M.

FIGS. 5-7. *Diplopholcos sagittellarium*, new species (p. 217).

5. The incrusting zoarium, $\times 20$, showing a few of the large (B) zooecia. One zooecium bears an ovicell (*ov*).
6. Another zoarium, $\times 20$, exhibiting well developed polypidial convexity and zooecial opesial denticles.
7. View of the interior of the zooecia, $\times 20$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63976, U.S.N.M.

FIG. 8. *Diplopholcos sagittarium*, new species (p. 218).

- The incrusting type-specimen, $\times 20$, showing the zooecia with large and small opesia. The characteristic large onychocellaria with two opesial denticles is well exhibited.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63977, U.S.N.M.

FIGS. 9-10. *Diplopholcos parrutiporum*, new species (p. 218).

9. The incrusting zoarium, $\times 20$. The zooecia with broad distal portion are ovicelled.
10. Another zoarium, $\times 20$, exhibiting the specific chambers more distinctly. Several B zooecia and onychocellaria may be seen.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63978, U.S.N.M.

FIGS. 11-14. *Diplopholcos fusiforme* Canu and Bassler, 1917 (p. 215).

11. The incrusting zoarium, $\times 20$, showing the two kinds of opesia, large and small, quite plainly.
Upper Jacksonian (Ocala limestone): Four miles below Bainbridge, Georgia.
Cat. No. 62582, U.S.N.M.
12. Another example, $\times 20$. One ovicell may be seen on a zooecium with large opesium (right-hand side) and also on one with small opesium (near the center).
13. Portion of a specimen, $\times 25$, in which the zooecia are quite regularly arranged.
14. Tangential thin section through a zooecium, $\times 100$, showing structure of the mural rim (to the left), the cryptocyst (to the right), the polypidial convexity and the opesiules.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63979, U.S.N.M.

PLATE 35.

FIGS. 1-4. *Floridina granulosa*, new species (p. 220).

1. Surface of the bilamellar zoarium, $\times 20$, with three ovicelled zooecia distinguished easily by their larger micrometric dimensions.
 2. Another zoarium, $\times 20$, with onychocellaria well developed. A calcified zooecium is present.
 3. A fragment, $\times 20$, in which the trifoliate character of the opesium is well shown.
 4. Another surface, $\times 20$, exhibiting the granulose character very clearly. A calcified zooecium and several onychocellaria may be noted.
- Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 63980, U.S.N.M.

FIG. 5. *Floridina bifoliata*, new species (p. 221).

- Portion of the bifoliate zoarium, $\times 20$. The smooth frontal and the very long onychocellaria are characteristic of the species. Some calcified zooecia may be noted.
- Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 63981, U.S.N.M.

FIGS. 6-8. *Floridina asymmetrica*, new species (p. 224).

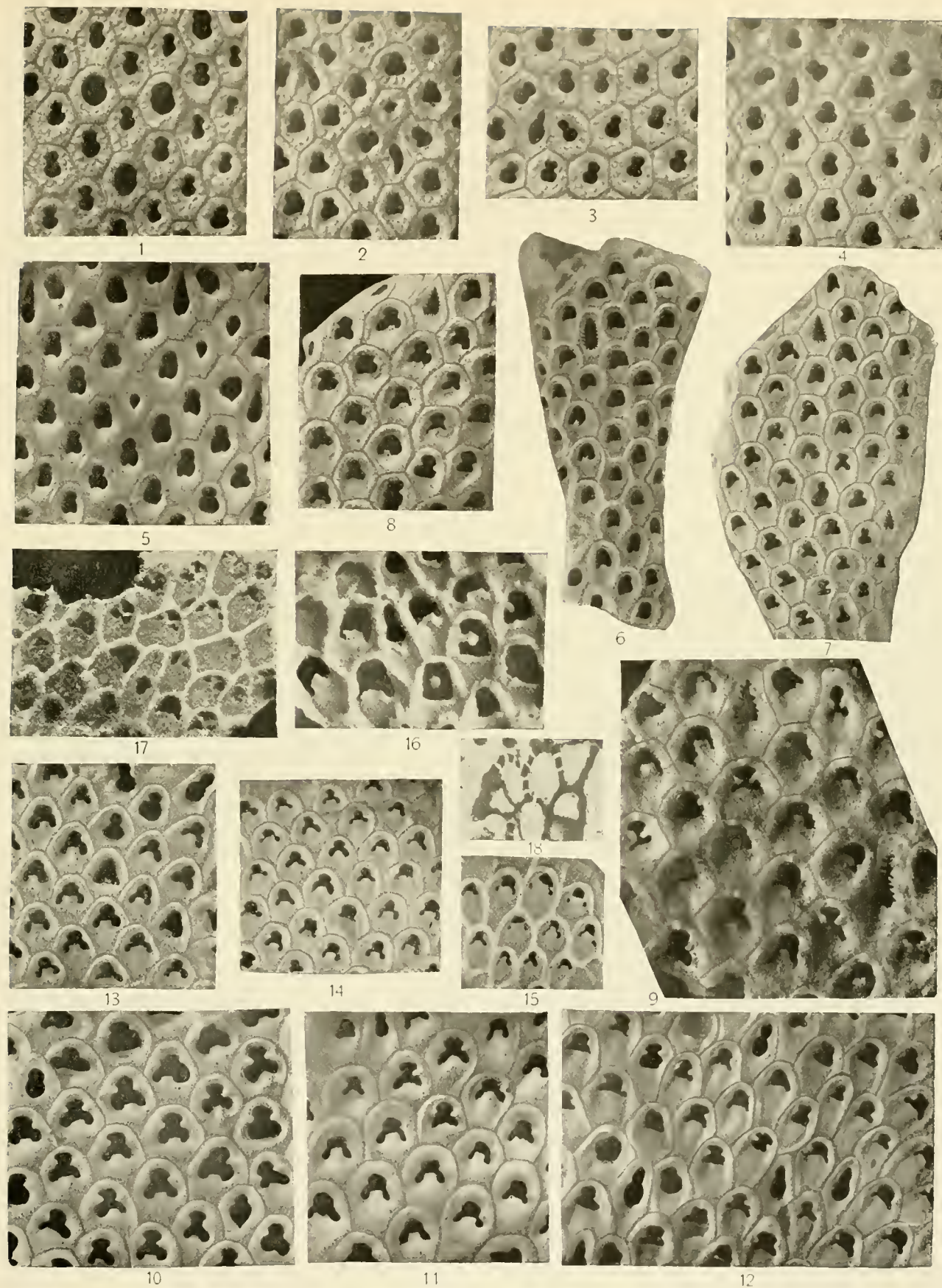
6. An example of the unilamellar tubular zoarium, $\times 20$.
 7. Another specimen, $\times 20$, in which the polypidial convexity and the trifoliate shape of the opesium are apparent.
 8. Portion of the same specimen, $\times 25$, showing the structure in more detail.
- Upper Jacksonian (Ocala limestone): Bainbridge, Georgia.
Cat. No. 63982, U.S.N.M.

FIG. 9. *Floridina onydentata*, new species (p. 221).

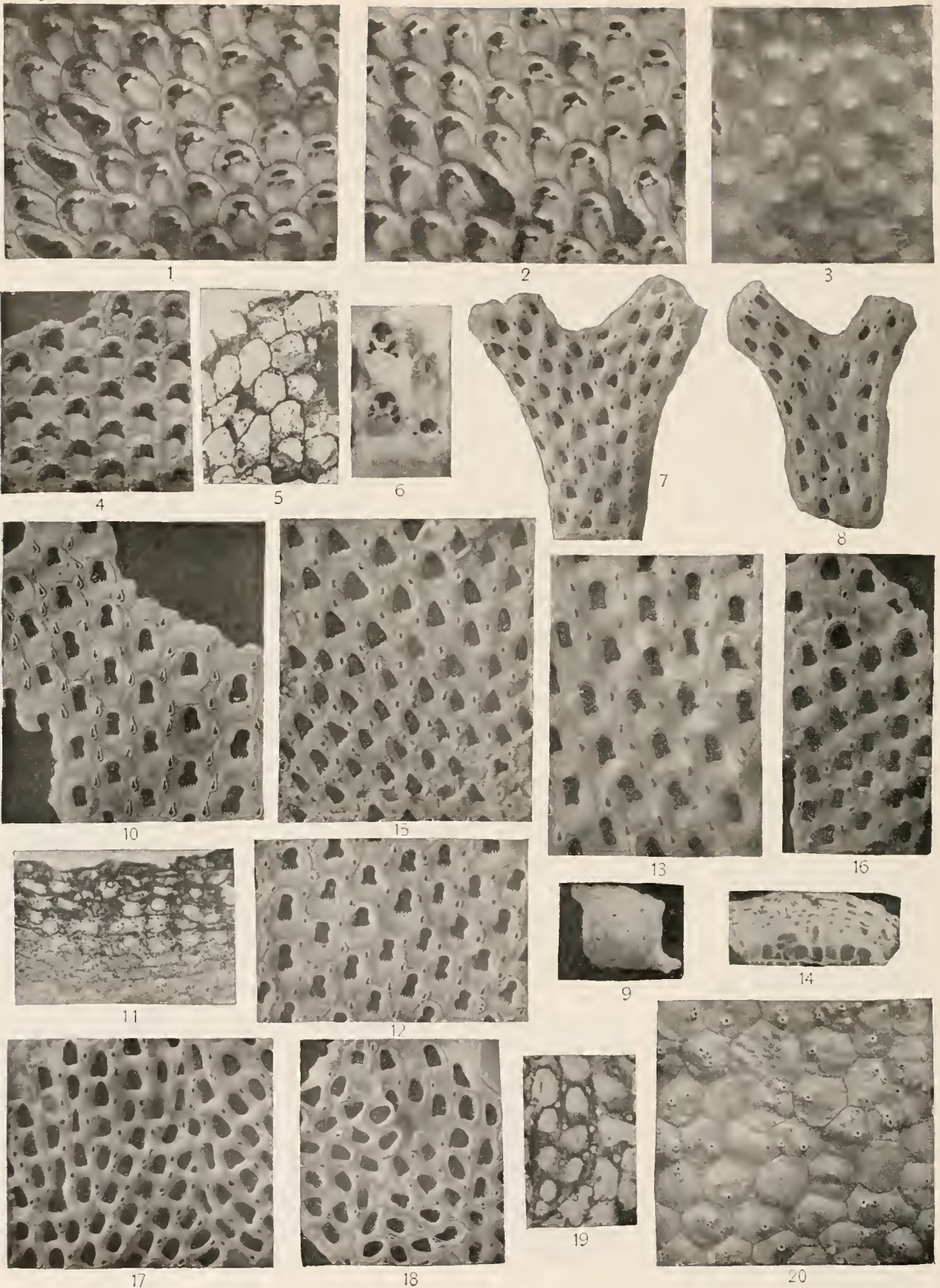
- The type-specimen of this unilamellar species, $\times 25$. The large zooecia and the denticulated onychocellarian opesia are distinguishing characters.
- Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63983, U.S.N.M.

FIGS. 10-18. *Floridina antiqua* Smitt, 1873 (p. 222).

- 10, 11. Two portions of the same unilamellar zoarium, $\times 25$.
 12. Another example, $\times 25$, with onychocellaria and two ovicelled zooecia. The polypidial convexity is little apparent.
 13. Surface of zooecia, $\times 20$, with the polypidial convexity strongly developed.
 14. Another portion of the same specimen, $\times 20$.
 15. A third portion of the above example, $\times 20$.
 16. Interior of zooecial frontal, $\times 25$, showing the tuberosities present.
 17. Another interior, $\times 20$, showing union of opesicular processes with the polypidial convexity.
 18. Tangential thin section, $\times 20$. Four pairs of lateral septulae and one distal septula are present.
- Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63984, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 36.

FIGS. 1-6. *Floridina laguncula*, new species (p. 223).

1. Portion of the free, unilamellar zoarium, $\times 25$, showing various conditions of the lateral processes and the opesiules.
2. Zooecia of another surface, $\times 25$.
3. Basal side of zoarium, $\times 20$, with the hydrostatic tuberosities quite visible.
4. A small fragment, $\times 20$, with the lateral process so reduced that the opesiules are quite visible.
5. Tangential thin section, $\times 20$, exhibiting the very thin zooecial walls.
6. View of the interior of the frontal, $\times 20$, showing the trifoliate opesium.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 63985, U.S.N.M.

FIGS. 7, 8. *Dacryonella minor*, new species (p. 232).

7. A portion of the small, bifurcated, bifoliate zoarium, $\times 20$, with some of the zooecia showing the polypidial convexity.
8. Another small zoarium, $\times 20$, in which the avicularia are fairly well developed.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Jackson County, Florida.

Cat. No. 63986, U.S.N.M.

FIGS. 9-20. *Dacryonella octonaria* Canu and Bassler, 1917 (p. 231).

9. An example of the incrusting zoarium, formed of numerous layers piled on top of each other, natural size.
10. Edge of zoarium, $\times 20$, showing broad zooecia.
11. Transversal thin section of a large expanded frond, $\times 20$.
12. Normally developed zooecia, $\times 20$.
13. Another zoarium, $\times 25$, in which a number of the zooecia exhibit ovicells.
14. Transversal section of a zoarium with narrow fronds.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 62584, U.S.N.M.

15. Zoarial lamella, showing the progressive increase of the zooecial size in the direction of the exterior margins.

Upper Jacksonian (Ocala limestone): Red Bluff on Flint River, 7 miles above Bainbridge, Georgia.

Cat. No. 63987, U.S.N.M.

16. Exterior lamella with reduced zooecia, $\times 20$.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Jackson County, Florida.

Cat. No. 63988, U.S.N.M.

17. Exterior lamella with deformed zooecia, $\times 20$.

18. View of zoarium, $\times 20$, showing distorted zooecia.

Middle Jacksonian: $3\frac{1}{2}$ miles north of Grovania, Georgia.

Cat. No. 63989, U.S.N.M.

19. Tangential thin section, $\times 20$, exhibiting the rounded avicularian cavities and the olocystal structure of the wall.

20. Basal side of zoarium, $\times 20$, with the hydrostatic porous tuberosities quite visible.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 63990, U.S.N.M.

PLATE 37.

FIGS. 1, 2. *Acchmella crassimargo*, new species (p. 233).

1. An entire example of the incrusting zoarium, $\times 20$. The thick walled zooecia and the elliptical avicularian opesia are the important specific characters.
 2. A small incrustation, $\times 20$, showing the ancestrula and neighboring zooecia.
- Middle Jacksonian: Near Lenuds Ferry, South Carolina.
Cat. No. 63991, U.S.N.M.

FIGS. 3-5. *Acchmella filinargo* Canu and Bassler, 1917 (p. 234).

3. The incrusting zoarium, $\times 20$, illustrating ancestrula and surrounding zooecia.
 4. Another portion of the same zoarium, $\times 20$, showing the specific characters—thin zooecial walls and avicularia with round opesia.
 5. Another example, $\times 20$. The three zooecia with thick distal borders are oricelled.
- Upper Jacksonian (Ocala limestone): West bank Sepulga River, Escambia County, Alabama.

Cat. No. 62585, U.S.N.M.

FIGS. 6-9. *Lunularia verrucosa*, new species (p. 242).

6. Zoarium, natural size.
 7. Surface of the same specimen, $\times 20$, showing the very thick hydrostatic zooecia.
 8. Inner side of zoarium, $\times 20$.
- Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 63992, U.S.N.M.

9. Interior of frontal of zooecia, $\times 20$.
- Middle Jacksonian: 18 miles west of Wrightsville, Georgia

Cat. No. 63993, U.S.N.M.

FIGS. 10-13. *Lunularia fenestrata* De Gregorio, 1894 (p. 244).

10. Zoarium, natural size
11. Surface of the same, $\times 20$, showing the hydrostatic ancestrular zooecia with four openings, and also the normal zooecia.
12. View, $\times 20$, of the radial ribs of the inner side, pierced by scattered pores.
13. Photograph of edge of transversely broken zoarium, $\times 20$. The lateral septulae are visible.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 63994, U.S.N.M.

FIGS. 14-18. *Lunularia tubifera*, new species (p. 245).

14. Four fragmentary zoaria, natural size.
15. One of these fragments, $\times 20$. The ancestrular zooecia are radicular and the vibracula are large and not in distinct rows.
16. Another fragment, $\times 20$, showing ordinary zooecia transformed into radicular ones.
17. A small example, $\times 20$, exhibiting characters of the ordinary zooecia and vibracula.
18. Inner side of zoarium, $\times 20$, showing the tube-like zooecia and the absence of a covering membrane.

Middle Jacksonian: One-half mile south of Georgia Kaolin Company's mine, Twiggs County, Georgia.

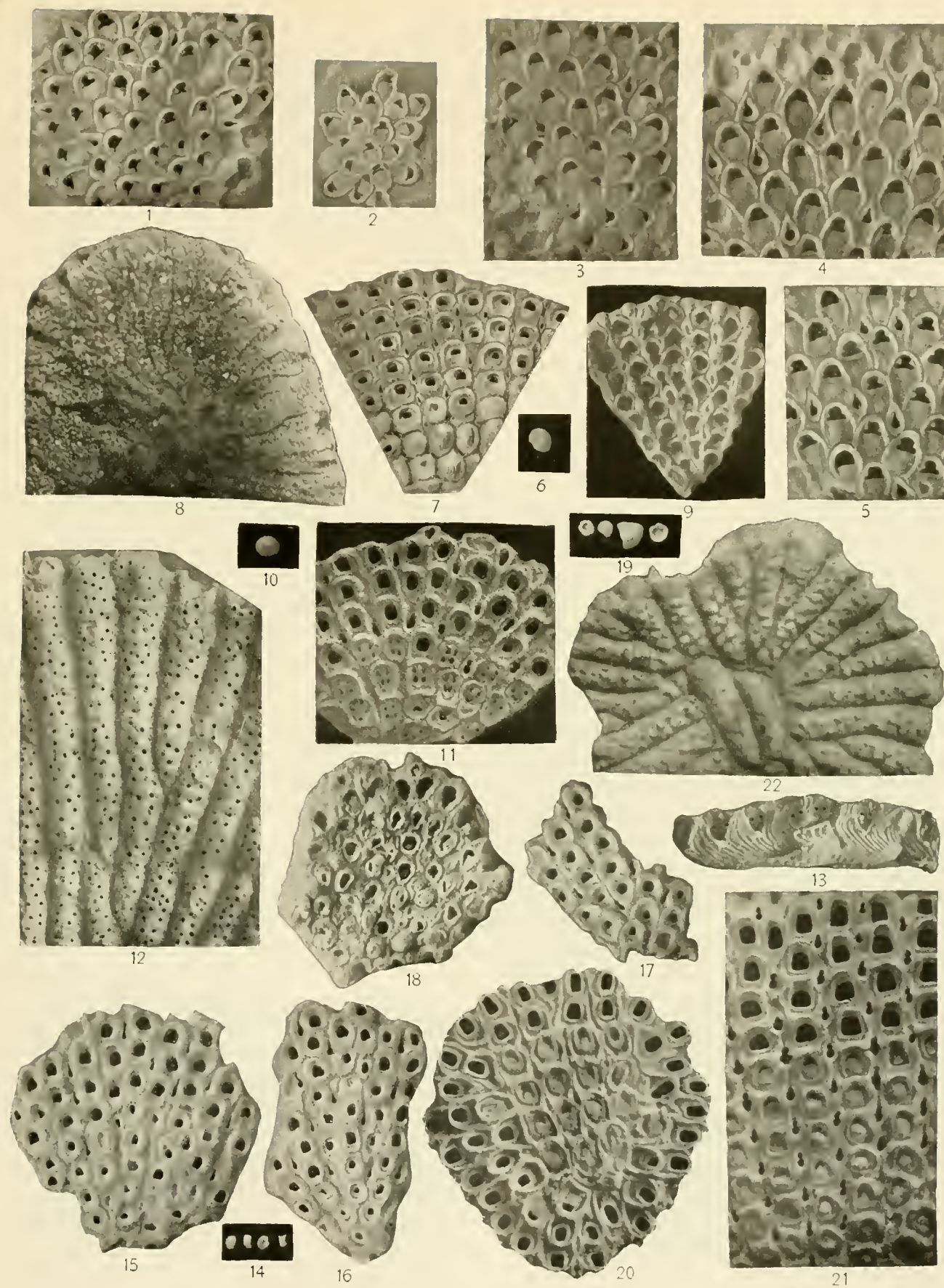
Cat. No. 63995, U.S.N.M.

FIGS. 19-22. *Lunularia jacksonensis*, new species (p. 250).

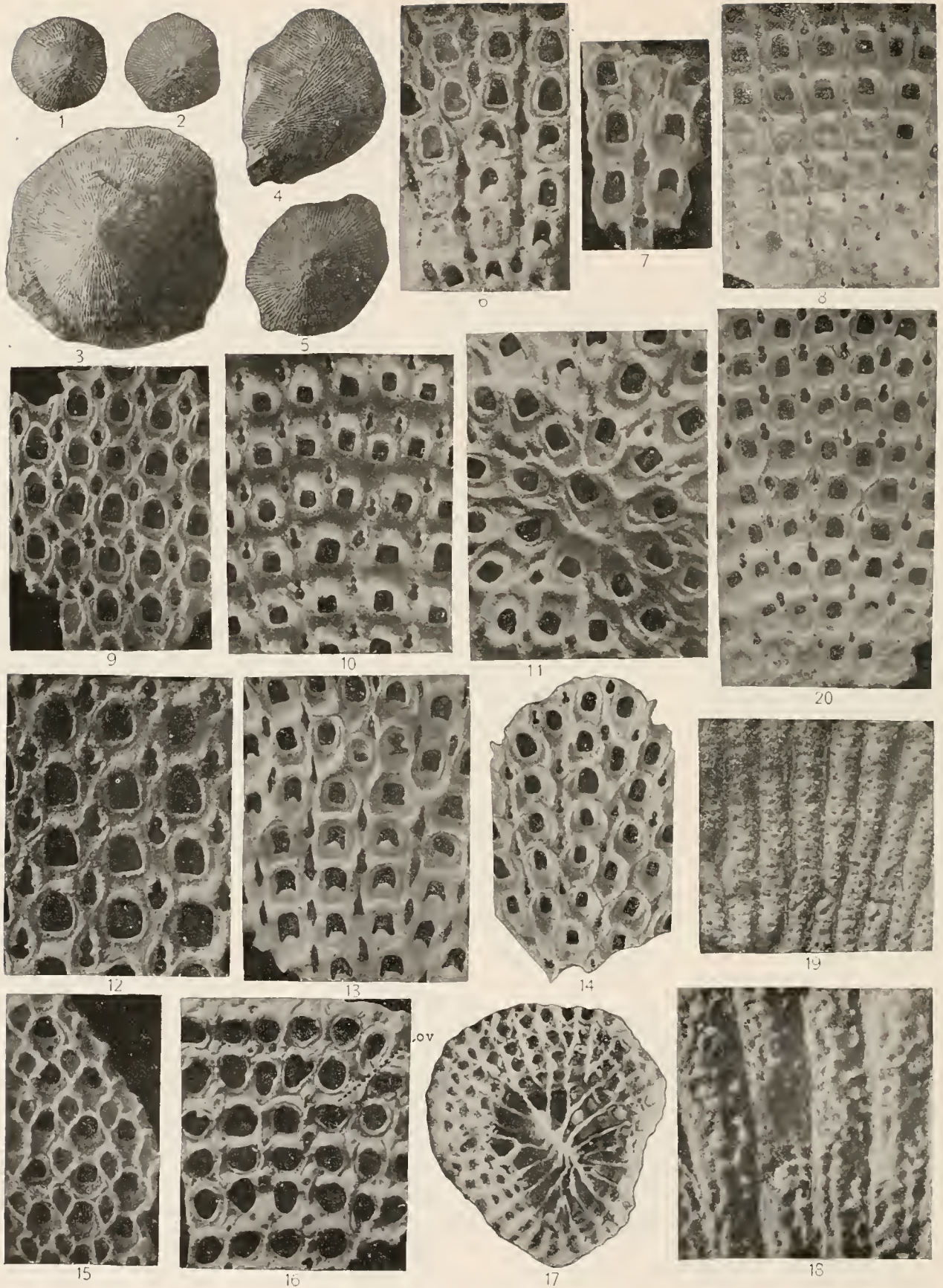
19. Fragmentary zoaria, natural size.
20. An entire zoarium, $\times 20$, consisting mainly of hydrostatic zooecia.
21. Portion of a zoarium, $\times 20$, showing the ordinary and hydrostatic zooecia and the vibracula.
22. Inner side of zoarium, $\times 20$, exhibiting the radial tuberoso ribs.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 63996, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 38.

FIGS. 1-20. *Lunularia distans* Lonsdale, 1845 (p. 245).

- 1-5. Five examples natural size of zoaria preserving only the basal membrane. This is the most frequent occurrence of the species.
6. Normal zooecia, $\times 20$, exhibiting a lamella in some of them.
7. A small fragment of normal zooecia, $\times 20$, with the polypidian convexity well developed in two of the zooecia and the ovicell shown on two of them.
8. Surface of a zoarium, $\times 20$, showing hydrostatic radicular zooecia succeeded by several rows of the normal small form.
9. An example of normal zooecia, $\times 20$, in which many of the zooecia preserve the ovicells.
10. Photograph of another zoarium, $\times 20$, with ovicelled zooecia.
11. Ancestrular region of zoarium, $\times 20$, in which the ancestrula is very large and is surrounded immediately by large zooecia.
12. Normal zooecia and well developed vibracula, $\times 20$, several of the former with ovicells.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 63997, U.S.N.M.

13. A zoarium, $\times 20$, with well developed polypidian convexities.
14. A fragmentary zoarium, $\times 20$, illustrating another aspect of the species.

Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 63998, U.S.N.M.

15. Interior of frontal of the zooecia, $\times 20$.
16. Another interior of the frontal, $\times 20$, showing absence of basal wall and the occurrence of an ovicell (or) on the much developed distal wall.
17. Inner side of an entire zoarium, $\times 10$, showing the absence of basal wall.
18. Inner side of the basal lamella, $\times 20$, seen on specimen of figure 1.
19. A wax impression of a mold, $\times 20$, of the exterior showing the external appearance of the inner side.
20. Portion of a zoarium, $\times 20$. The rows of radicular zooecia are followed by rows of small zooecia.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 63997, U.S.N.M.

PLATE 39.

FIGS. 1-5. *Lunularia contigua* Lonsdale, 1845 (p. 247).

1. View of the zoarium, natural size, preserving only the basal lamina.
2. A life-sized view of the interior of the zoarium as preserved in the rock.
3. Celluliferous side of an example, $\times 20$, showing both small and large zooecia.
4. Interior of a zoarium, $\times 20$, illustrating the sacklike form of the zooecia, which are moreover calcified.
5. Edge of a zoarium, showing the calcified zooecia in transverse fracture.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 63999, U.S.N.M.

FIGS. 6, 7. *Rhagasostoma levigatum*, new species (p. 254).

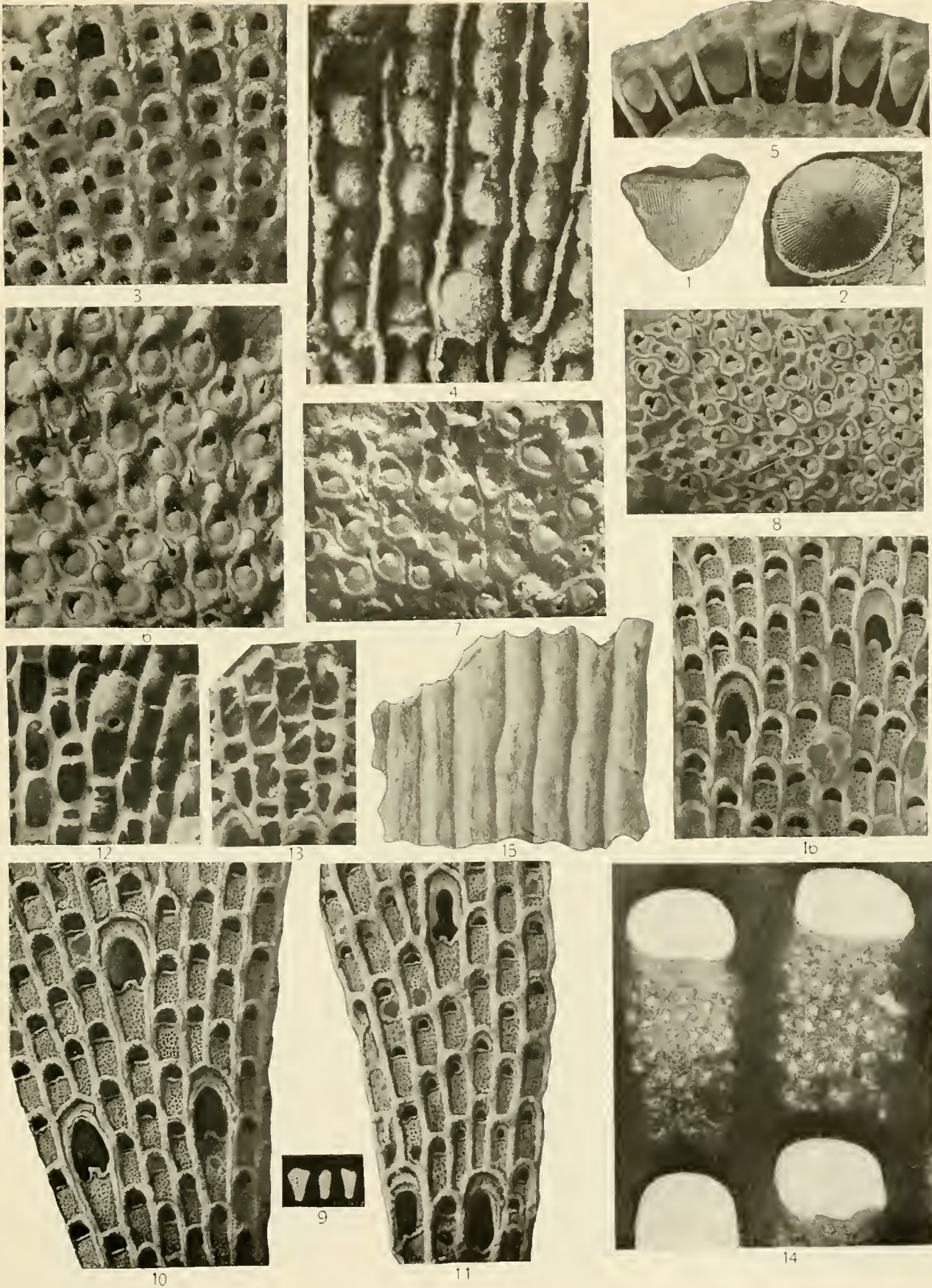
6. Surface of the incrusting zoarium, $\times 20$, with numerous ovicells developed.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64000, U.S.N.M.
7. Surface of zooecia, $\times 20$, of the Vicksburgian form.
Vicksburgian (Marianna limestone): Salt Mountain, five miles south of Jackson, Alabama.
Cat. No. 64001, U.S.N.M.

FIG. 8. *Rhagasostoma minusculum*, new species (p. 255).

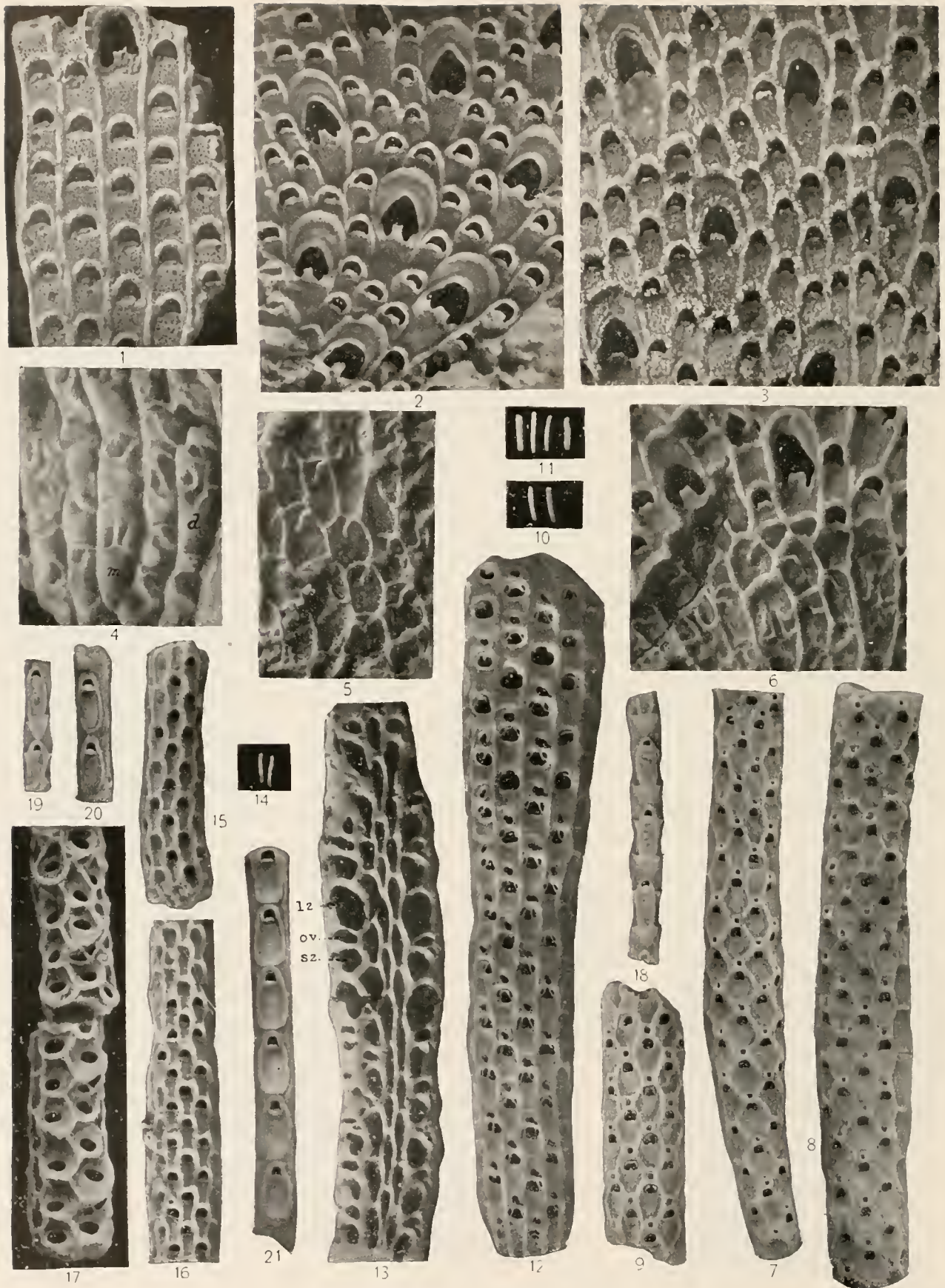
- The type-specimen of this minute incrusting species, $\times 20$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64002, U.S.N.M.

FIGS. 9-16. *Steganoporella jacksonica*, new species (p. 262).

9. Three of the bilamellar zoaria, natural size.
10. Surface, $\times 20$, exhibiting the large (*B*) zooecia and the small (*a*) zooecia.
11. Another zoarium, $\times 20$.
12. Photograph of interior, $\times 20$, after abrasion of the dorsal side.
13. View, $\times 20$, showing oblique partition in the *a* zooecia obtained by abrasion of the frontal.
14. Tangential thin section through zooecia, $\times 100$.
Middle Jacksonian: Baldock, Barnwell County, South Carolina.
Cat. No. 64003, U.S.N.M.
15. Dorsal side of a zoarium, $\times 20$, which has parted through the middle.
Middle Jacksonian: Seventeen miles northeast of Hawkinsville, Georgia.
Cat. No. 64004, U.S.N.M.
16. Surface of a broad zoarium, $\times 20$.
Middle Jacksonian: Three and a half miles north of Grovania, Georgia.
Cat. No. 64005, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



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PLATE 40.

FIG. 1. *Steganoporella rectangularia*, new species (p. 263).

Fragment of the bilamellar zoarium. $\times 20$. One *B* zooecium, with its prominent polypide tube, is present.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 64006, U.S.N.M.

FIGS. 2-6. *Steganoporella incrustans*, new species (p. 263).

2. The incrusting zoarium, $\times 20$, exhibiting the small *a* zooecia and the very large *B* zooecia, with prominent polypidial tube.

Upper Jacksonian (Ocala limestone): West bank Sepulga River, Escambia County, Alabama.

Cat. No. 64007, U.S.N.M.

3. Small portion of a broad expansion $\times 20$, with the surface slightly altered by chemical action.

Upper Jacksonian (Ocala limestone): Four miles below Bainbridge, Georgia.

Cat. No. 64008, U.S.N.M.

4. Portion of zoarium, $\times 20$ with frontal removed. The internal structure of two *B* zooecia is shown.

5. View, $\times 20$, showing oblique partition in *a* zooecia.

6. Another view, $\times 20$, with a portion of the frontal removed, showing the partition in the *a* zooecia.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Florida.

Cat. No. 64009, U.S.N.M.

FIGS. 7-10. *Cellaria strictocella*, new species (p. 273).

7, 8. Two segments, $\times 20$ showing general structure of zooecia and ovicells.

9. Fragment, $\times 20$, illustrating occurrence of lamella in the zooecial aperture.

10. Two segments, natural size.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64010, U.S.N.M.

FIGS. 11-13. *Cellaria dimorpha*, new species (p. 273).

11. Four segments, natural size.

12. An entire segment, $\times 20$, exhibiting the characteristic large and small zooecia, with the lamella in their aperture and the ovicell openings resembling avicularia.

13. Longitudinal section through center of a segment, $\times 20$. The large (*lz*) and small zooecia (*sz*) and the endotochal ovicell (*ov*) are to be noted.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64011, U.S.N.M.

FIGS. 14-17. *Cellaria bifaciata*, new species (p. 274).

14. Segments, natural size.

15. Posterior face of a segment, $\times 20$, exhibiting the small zooecia.

16. Same view of another segment, $\times 20$. A single ovicell may be noted.

17. Anterior face of a specimen, $\times 20$, showing the large hexagonal zooecia and falciform avicularia.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64012, U.S.N.M.

FIGS. 18-20. *Quadricellaria laciniata*, new species (p. 279).

18. The largest fragment observed, $\times 20$. The shallow cryptocyst and the inferior triangular gymnocyst are shown.

19, 20. Two small fragments, $\times 20$, illustrating slight variations.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64013, U.S.N.M.

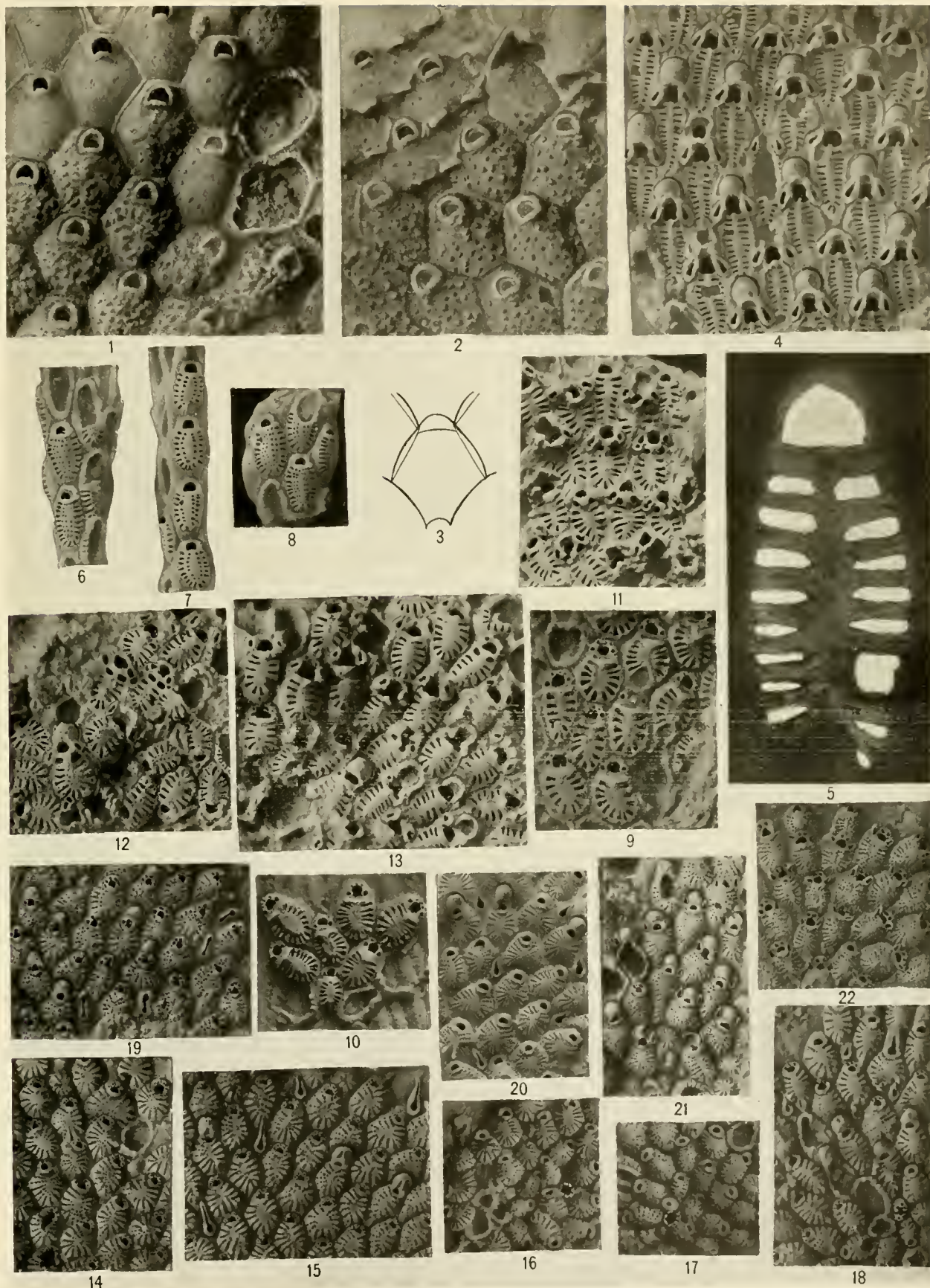
FIG. 21. *Quadricellaria burnsi*, new species (p. 279).

The type-specimen of this articulated species, $\times 20$.

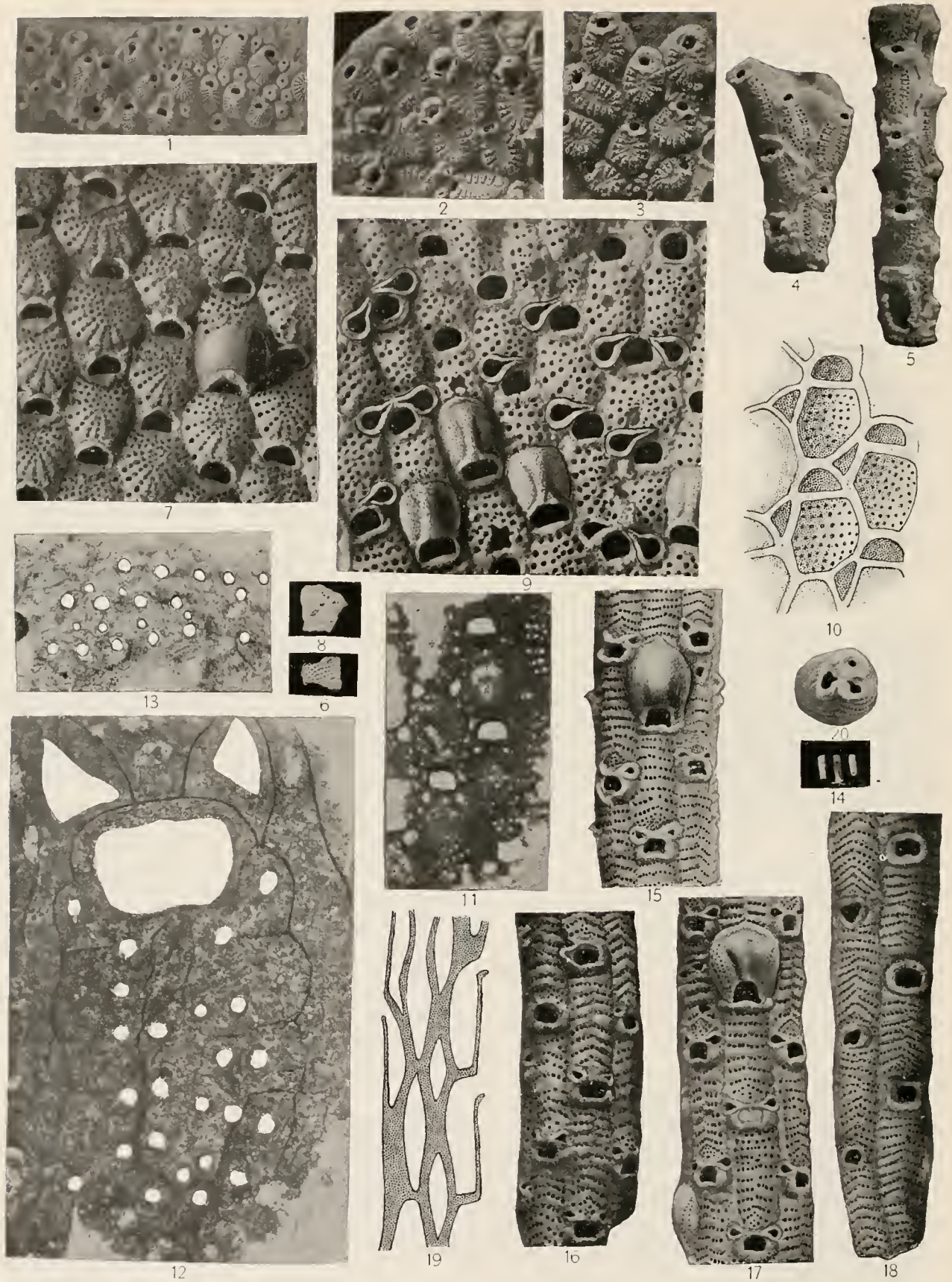
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64014, U.S.N.M.

- FIGS. 1-3. *Macropora multilamellosa*, new species (p. 277).
1. Surface of the external layer of the multilamellar zoarium, $\times 20$. The normal zooecia are smooth and separated by a salient line. Hydrostatic tuberosities are developed on the frontal in the lower half of the figure.
 2. Zooecia of an internal lamella, $\times 20$. Their frontal is granulated and their apertures are closed by a lamina.
 3. Sketch of tangential thin section through a zooecium, $\times 20$, showing occurrence of 3 diatellae.
Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 64015, U.S.N.M.
- FIGS. 4, 5. *Membraniporella ulrichi*, new species (p. 287).
4. Surface of the bilamellar zoarium, $\times 20$, showing all of the specific characters well developed.
 5. Tangential thin section through the frontal of a zooecium, $\times 100$, showing regularly placed olocystal elements.
Middle Jacksonian; Near Lennds Ferry, South Carolina.
Cat. No. 64016, U.S.N.M.
- FIGS. 6-8. *Membraniporella compressa*, new species (p. 288).
6. Views of the free cylindrical zoarium, $\times 20$.
Middle Jacksonian; 18 miles west of Wrightsville, Georgia.
Cat. No. 64017, U.S.N.M.
 - 7, 8. Two fragments of a more compressed example, $\times 20$.
Middle Jacksonian; One-half mile southeast of Georgia Kaolin Company's Mine, Twiggs County, Georgia.
Cat. No. 64018, U.S.N.M.
- FIGS. 9, 10. *Membraniporella monilifera*, new species (p. 289).
9. View of the incrusting zoarium, $\times 20$, showing the costular tuberosities in the form of a T. Several zooecia have broken ovicells.
Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 64019, U.S.N.M.
 10. Young zooecia, $\times 20$. The prominence at the aperture only is developed.
Middle Jacksonian; Near Lennds Ferry, South Carolina.
Cat. No. 64020, U.S.N.M.
- FIGS. 11-13. *Membraniporella bioculata*, new species (p. 287).
11. The incrusting zoarium, $\times 20$, showing the characteristic two large pores.
 12. Another portion of the same zoarium, $\times 20$, with an ovicelled zooecium.
 13. Another specimen, $\times 20$, illustrating development of the mucro to form the two large pores. The zooecia with avicularium have no spines.
Middle Jacksonian; Near Lennds Ferry, South Carolina.
Cat. No. 64021, U.S.N.M.
- FIGS. 14-18. *Puellina radiata* Moll, 1803 (p. 295).
14. Portion of the incrusting zoarium, $\times 25$. No avicularia are visible.
 15. Another zoarium, $\times 25$, in which the long avicularium is developed. Several zooecia with keeled ovicell may be noted.
Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 64022, U.S.N.M.
 - 16, 17. Two zoaria, $\times 25$, preserving the ancestrula which is a membraniporoid zooecium surrounded by spines.
Vicksburgian (Marianna limestone); Three miles southeast of Vossburg, Jasper County, Mississippi.
Cat. No. 64023, U.S.N.M.
 18. Portion of an example, $\times 25$, showing the ancestrula (in the lower part) and an avicularium regenerated in a zooecium (upper part of figure).
Vicksburgian ("Chimney rock" of Marianna limestone); One mile north of Monroeville, Alabama.
Cat. No. 64024, U.S.N.M.
- FIG. 19. *Puellina radiata anticula*, new variety (p. 297).
- Surface of the type, $\times 25$, exhibiting the characteristic avicularia with beak like that of a duck.
Upper Jacksonian (Ocala limestone); Seven miles above Bainbridge, Georgia.
Cat. No. 64025, U.S.N.M.
- FIG. 20. *Puellina radiata carolinensis* Gabb and Horn, 1862 (p. 297).
- Surface of zooecia, $\times 25$, illustrating the characteristic smooth peristome and large avicularia.
Middle Jacksonian; Near Lennds Ferry, South Carolina.
Cat. No. 64026, U.S.N.M.
- FIG. 21. *Puellina simulator*, new species. (See also pl. 84, fig. 14.) (p. 298.)
- Ovicelled zooecia, $\times 25$.
Jacksonian (Zeuglodon zone); Cocoa post office, Choctaw County, Alabama.
Cat. No. 64027, U.S.N.M.
- FIG. 22. *Puellina hispidosa*, new species (p. 297).
- An example, $\times 25$, with the zooecia showing the two large spines and two small triangular avicularia.
Upper Jacksonian (Ocala limestone); Seven miles above Bainbridge, Georgia.
Cat. No. 64028, U.S.N.M.



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PLATE 42.

FIG. 1. *Distansescharella jacksonica*, new species (p. 300).

The incrusting type-specimen, $\times 30$. Numerous small accessory cells are shown.
Middle Jacksonian: One-half mile southeast of Georgia Kaolin Co.'s Mine, Twiggs
County, Georgia.

Cat. No. 64029, U.S.N.M.

FIGS. 2, 3. *Gephyrotes curvica*, new species (p. 302).

2. The incrusting zoarium, $\times 20$, with ovarian zooecia, which alone bear the ovicell, spiramen and oral avicularia.
3. Another example, $\times 20$, without ovicelled zooecia. The ordinary zooecia lack the spiramen and oral avicularia.

Upper Jacksonian (Ocala limestone): West bank Sepulga River, Escambia County,
Alabama.

Cat. No. 64030, U.S.N.M.

FIGS. 4, 5. *Gephyrotes quadriserialis*, new species (p. 304).

4. A fragment of a bifurcated zoarium, $\times 20$. The spiramen is here replaced by a pseudo-rimule.
5. The free cylindrical zoarium, $\times 20$. The spiramen is present on the zooecia without ovicells.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Florida.

Cat. No. 64031, U.S.N.M.

FIGS. 6, 7. *Metracolpota brevis*, new species (p. 305).

6. Fragment of the bifoliate zoarium, natural size.
7. Portion of the surface, $\times 20$. The large, short zooecia, the smooth ovicell and the absence of avicularia are characteristic.

Middle Jacksonian: Near Lenuds Ferry, South Carolina.

Cat. No. 64032, U.S.N.M.

FIGS. 8-13. *Metracolpota grandis*, new species (p. 305).

8. Portion of the bifoliate zoarium, natural size.
9. Surface of the same specimen, $\times 20$. The long zooecia, with carinated ovicell and the large distal avicularia, are the distinguishing characters.
10. Drawing of the interior of the zooecial frontal, $\times 20$, showing the proximal border of the aperture bordered by a thick collar.
11. Tangential thin section, $\times 25$.
12. Tangential thin section of a single zooecium, $\times 100$. The avicularia, lacunae, traces of the costules and the polygonal network are visible.
13. Small portion of a tangential thin section, $\times 100$. The larger white pores are lacunae, while the smaller intermediate ones are lumen pores.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64033, U.S.N.M.

FIGS. 14-20. *Metracolpota cylindrica*, new species (p. 307).

14. The free, cylindrical zoaria, natural size.
15. An example, $\times 20$, in which the keel of the ovicell is little developed.
16. Surface of zooecia, $\times 20$, with the avicularia reduced in size.
17. A well-preserved specimen, $\times 20$, with the ovicell and avicularia well developed. One of the zooecial apertures is closed by a calcareous operculum.
18. Another zoarium, $\times 20$, in which the avicularia are absent.
19. Sketch of a longitudinal section through a zoarium, $\times 20$, showing the structure of the zooecia and their thin walls.
20. The narrow lower extremity of the zoarium, $\times 20$, exhibiting three pores.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64034, U.S.N.M.

FIGS. 1-7. *Metracolpota robusta* Camm and Bassler, 1917 (p. 306).

1. Three fragments of the bifoliate zoarium, natural size.
2. Surface of an example, $\times 20$, with some broad zooecia showing costules radially arranged. The infrequent avicularia with pivot are present on this specimen.
3. Another specimen, $\times 20$, with numerous ovicelled zooecia. The avicularia are entirely absent.
4. Tangential thin section through the walls of a zooecium, $\times 100$. The wall is composed of scattered olocystal elements, and the avicularia represented by the two smaller openings appear to be interzooecial.
5. Sketch of a longitudinal section through an ovicelled zooecium. The ovicell is seen occupying a part of the distal zooecium.
6. Edge view of a zoarium, showing four or five lateral septulae to a zooecium.
7. Drawing of the interior of a zooecium, illustrating the occurrence of the ovicell in the distal zooecia.

Middle Jacksonian: Lemuds Ferry, South Carolina.

Cat. No. 62586, U.S.N.M.

FIG. 8. *Cribrendocium tenuicostulatum* Camm and Bassler, 1917 (p. 310).

View of the incrusting type-specimen, $\times 20$, exhibiting the endozooecial ovicell and the numerous thin costules, separated by very small lacunae, and without lumen pores.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 62588, U.S.N.M.

FIG. 9. *Figularia crassicostulata*, new species (p. 316).

The incrusting type-specimen, $\times 20$. The hyperstomial ovicell and the larger size of the costules separate this from the preceding species.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Florida.

Cat. No. 64036, U.S.N.M.

FIGS. 10-13. *Acanthocella erinacea* Camm and Bassler, 1917 (p. 309).

10. A small fragment, $\times 20$, with traces of the ovicell. Large lacunae separate the costules in this specimen.
11. Another zoarium, $\times 20$, with one ovicelled zooecium.
12. View of a tangential section, $\times 40$, illustrating the occurrence of a lumen and large lumen pores.
13. The incrusting zoarium, $\times 20$, with zooecia lacking the ovicells.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 62587, U.S.N.M.

FIG. 14. *Corbulipora collaris*, new species (p. 308).

A portion of the free, quadriserial, bifurcated zoarium, $\times 20$, showing the occurrence of a collar about some of the zooecial apertures, formed by the union of the first three pairs of costules.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64035, U.S.N.M.

FIGS. 15-18. *Gastropella asperula*, new species (p. 321).

15. Three of the free cylindrical zoaria, natural size.
16. Surface of an example, $\times 20$, showing the large ascopore in the middle of the frontal and the small areolae.
17. Another example, $\times 20$, in which numerous small avicularia are developed on the peristome.
18. Sketch of aperture, $\times 70$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

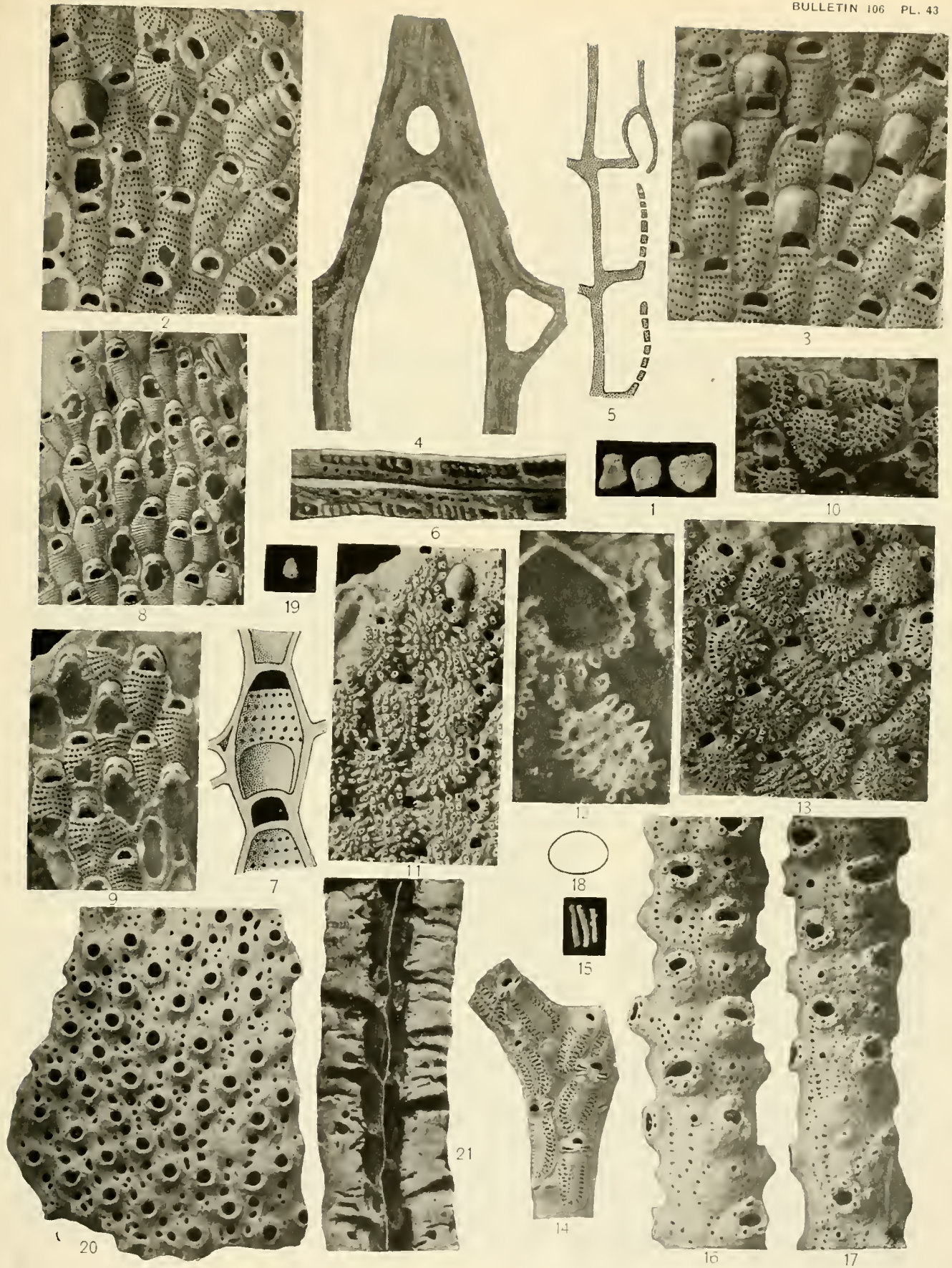
Cat. No. 64037, U.S.N.M.

FIGS. 19-21. *Beisselina trulla*, new species (p. 324).

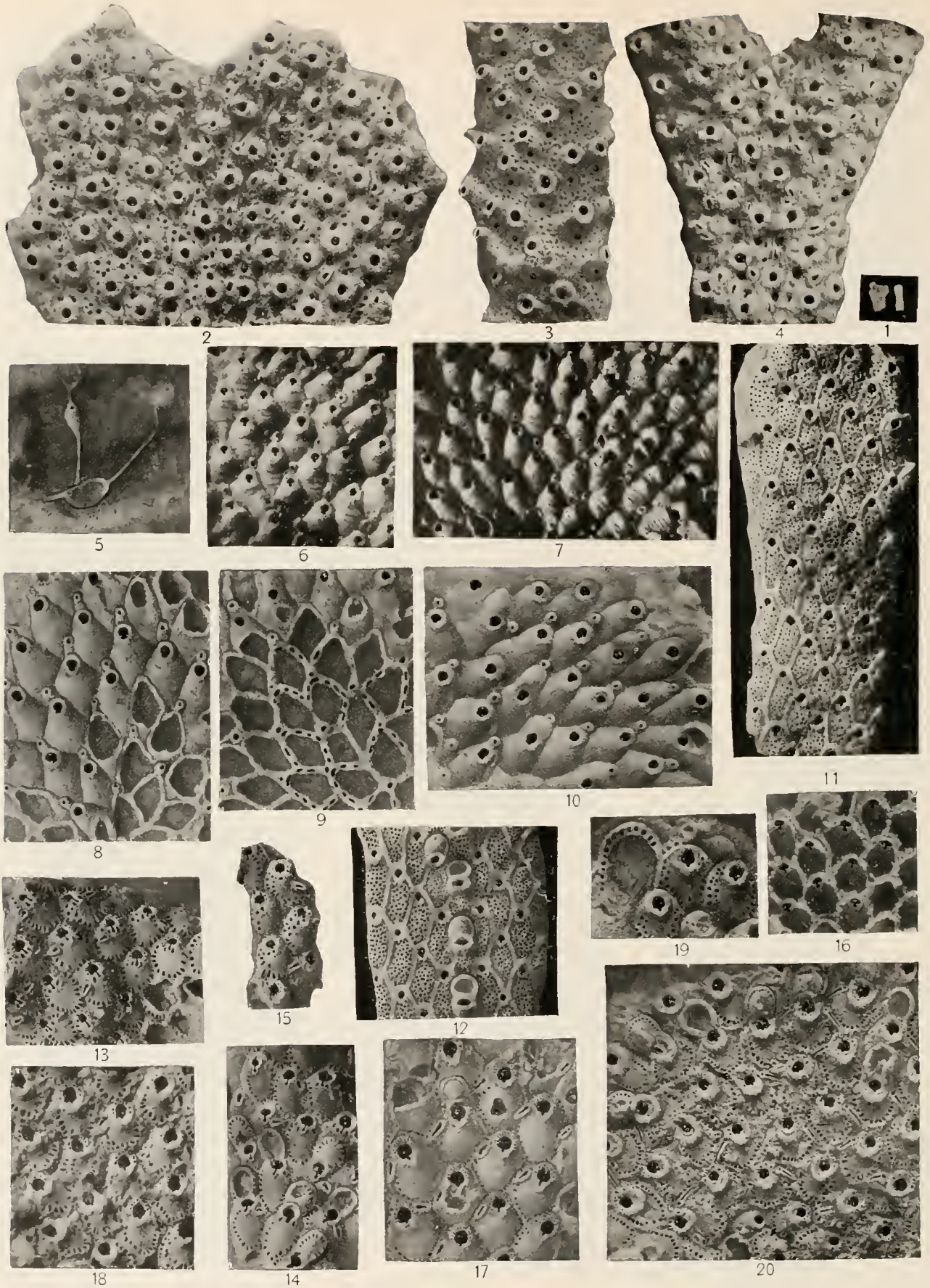
19. The free, bifoliate zoarium, natural size.
20. Surface, $\times 20$, showing the large tubular tremopores and the still larger ascopore.
21. Vertical section, $\times 20$.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 64038, U.S.N.M.



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FIGS. 1-4. *Beisselina implicata*, new species (p. 325).

1. Fragments of the narrow bifoliate zoarium, natural size.
2. Surface of a bifurcated fragment, $\times 20$, showing the indistinct zooecia, ascopore, frontal pores and avicularia.
3. Another zoarium, $\times 20$, possibly representing another species.
Upper Jacksonian (Ocala limestone): Alachua, Florida.
Cat. No. 64039, U.S.N.M.
4. A zoarium, $\times 20$, on which the avicularia are more numerous than usual.
Upper Jacksonian (Ocala limestone): One and one-half miles above Bainbridge, Georgia.
Cat. No. 64040, U.S.N.M.

FIG. 5. *Hippothoa*, species indetermined (p. 327).

- Specimen, $\times 20$, preserving but a single entire zooecium.
Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Florida.
Cat. No. 64041, U.S.N.M.

FIGS. 6, 7. *Trypostega undulata*, new species (p. 329).

6. The incrusting zoarium, $\times 25$, illustrating the undulations of the frontal and the infraoral gibbosity.
7. Portion of another zoarium, $\times 25$, showing ovicelled zooecia.
Middle Jacksonian: Eighteen miles west of Wrightsville, Georgia.
Cat. No. 64042, U.S.N.M.

FIGS. 8-10. *Trypostega inornata* Gabb and Horn, 1862 (p. 329).

8. The incrusting zoarium, $\times 25$, showing the nearly flat, smooth zooecial frontal.
Vicksburgian (Marianna limestone): Murder Creek, east of Castlebury, Alabama.
Cat. No. 64043, U.S.N.M.
9. An example, $\times 25$, with abraded surface, showing the dietellae.
Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.
Cat. No. 64044, U.S.N.M.
10. Another zoarium, $\times 25$, with several ovicelled zooecia.
Vicksburgian (Marianna limestone): Deep well, Escambia County, Alabama.
Cat. No. 64045, U.S.N.M.

FIGS. 11, 12. *Schizopodrella marginata*, new species (p. 342).

11. The bifoliate type-specimen, $\times 20$.
12. Portion of a specimen, $\times 20$, with ovicelled zooecia in the center.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64046, U.S.N.M.

FIGS. 13-16. *Laccerna jacksonensis*, new species (p. 346).

13. The incrusting zoarium, $\times 20$. The areolae and narrow, long rimule are well shown.
14. Surface with ovicelled zooecia, $\times 20$. The ovicell is festooned with areolae.
15. A small incrustation of this species, $\times 20$. The rimule is separated from the aperture.
16. Interior of frontal, $\times 20$, showing the olocyst and the rimule of the aperture.
Lower Jacksonian (Moodys marl): Jackson, Mississippi.
Cat. No. 64047, U.S.N.M.

FIGS. 17-20. *Laccerna hexagonalis*, new species (p. 347).

17. Surface of the incrusting zoarium, $\times 20$, showing the smooth olocystal frontal.
Vicksburgian (Glendon member of Marianna limestone): West bank Conecuh River, Escambia County, Alabama.
Cat. No. 64048, U.S.N.M.
18. Another zoarium, $\times 20$, with areolae well developed, but the pleurocyst incomplete.
19. Several zooecia, $\times 20$, one showing dietellae.
Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.
Cat. No. 64049, U.S.N.M.
20. Well developed zoarium, $\times 20$, in which the granular pleurocyst covers the olocyst.
An ovicelled zooecium in the upper left-hand corner of the figure shows an avicularium replacing a normal polypide in total regeneration.
Vicksburgian (Marianna limestone): Murder Creek, east of Castlebury, Alabama.
Cat. No. 64050, U.S.N.M.

PLATE 45.

FIGS. 1-9. *Schizopodrella riminca* Lonsdale, 1845 (p. 342).

1. Three fragments of the bilamellar zoarium, natural size. The third specimen shows a lateral frond growing at right angles to the original one.
2. Surface of zooecia, with thickened frontal, $\times 20$, in which the oral sinus has disappeared.
3. A zoarium showing the usual aspect of the zooecia, $\times 20$. The rimule and avicularia directed outward are shown.
- 4, 5. Two surfaces of ovicell bearing zooecia, $\times 20$. The ovicells are smooth.
6. A tangential thin section, $\times 100$, including an avicularium.
7. Sketch of longitudinal section, $\times 70$, through a zooecium with ovicell.
ap., aperture; *or or.*, orifice of ovicell; *or.*, ovicell; *s.*, septula; *tr.*, tremocyst; *z.*, zooecium.
8. View of the interior, $\times 20$. The oral sinus is well marked and the avicularia are present.
9. Tangential thin section of a zooecium, $\times 100$, showing microstructure of the tremocyst.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

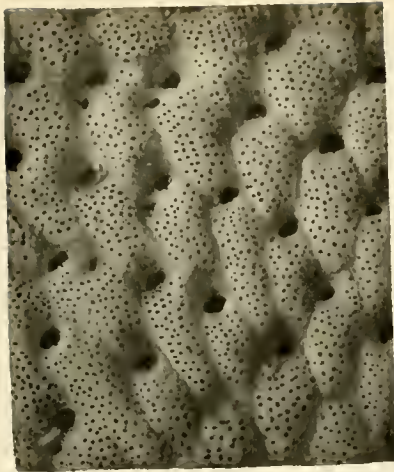
Cat. No. 64051, U.S.N.M.

FIGS. 10-18. *Schizopodrella linca* Lonsdale, 1845 (p. 340).

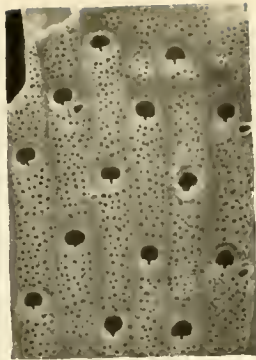
10. Two fragments of the bifoliate zoarium, natural size.
11. Portion of a zoarium, $\times 20$, showing the structure of the ovicells.
12. Narrow zooecia without ovicells, $\times 20$.
13. Wide zooecia, $\times 20$.
14. Surface of zooecia without ovicells, $\times 20$. The separating thread is well developed.
15. Portion of a zoarium, $\times 20$, with ovicelled zooecia.
16. Tangential thin section through the frontal, $\times 20$, illustrating structure of the tremocyst.
17. View of the interior, $\times 20$, showing the perforated olocyst.
18. Sketch of vertical section, $\times 20$, passing through two ovicelled zooecia.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

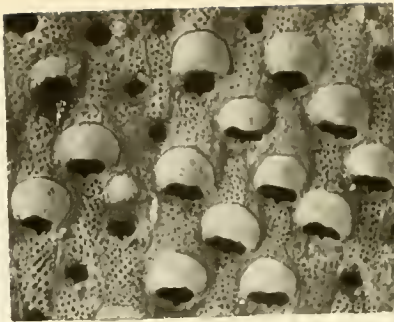
Cat. No. 64052, U. S. N. M.



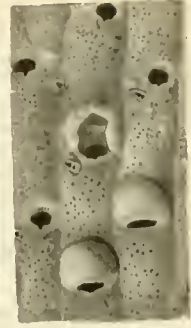
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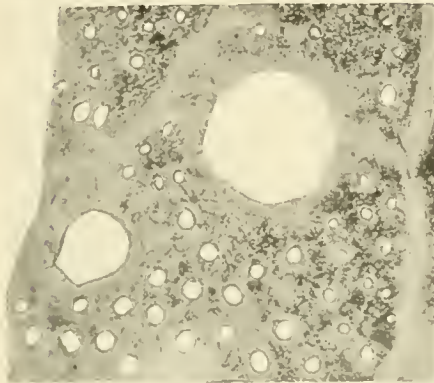
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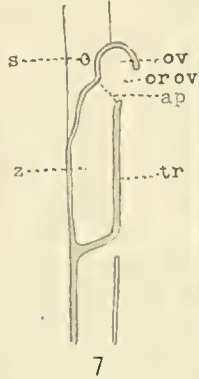
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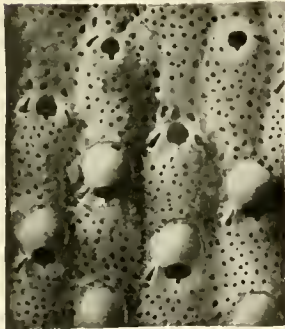
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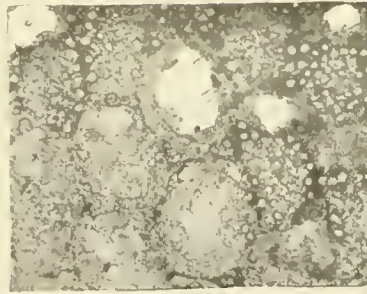
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8



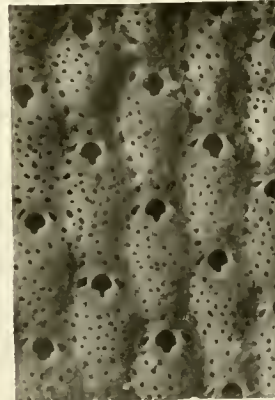
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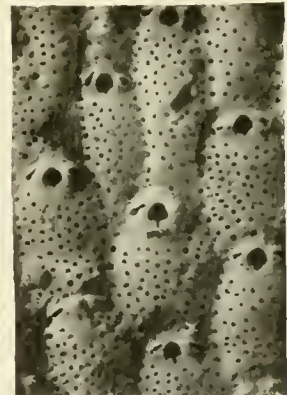
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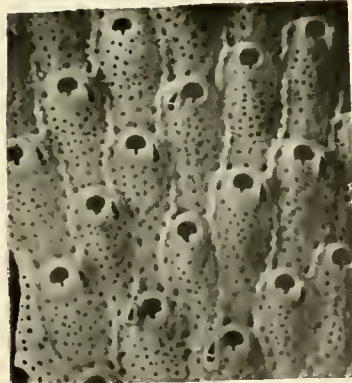
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13



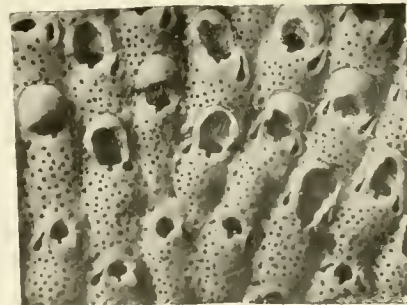
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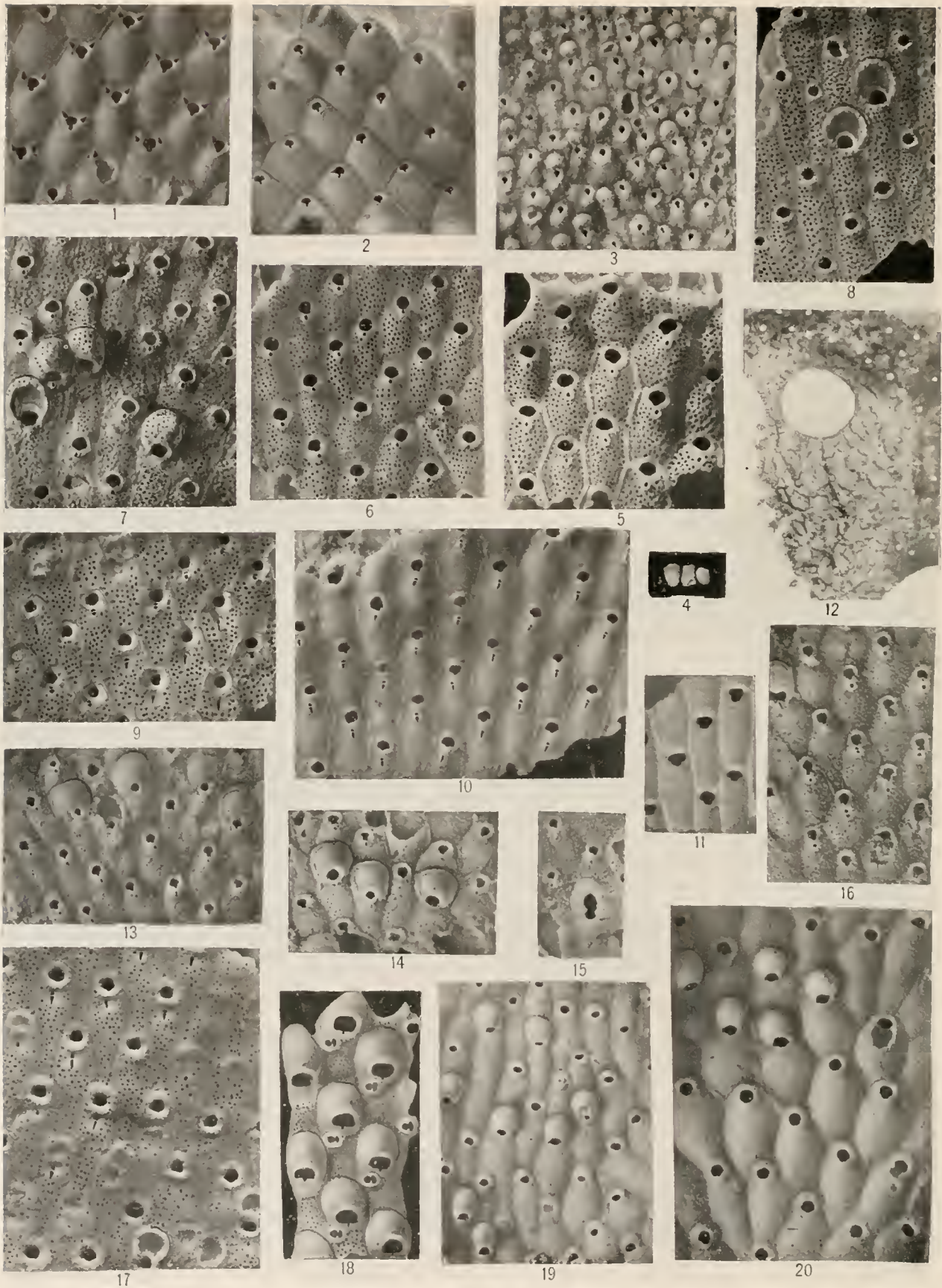
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JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 46.

- FIG. 1. *Buffonella hexagonalis*, new species (p. 349).
Surface of the incrusting zoarium, $\times 20$. The zooecia are hexagonal, have a smooth frontal and are separated by a salient thread.
Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 64053, U.S.N.M.
- FIG. 2. *Buffonella rhomboidalis*, new species (p. 350).
Photograph of the incrusting zoarium, $\times 20$, exhibiting the rhomboidal zooecia separated by a furrow.
Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 64054, U.S.N.M.
- FIG. 3. *Buffonella microstoma*, new species (p. 350).
Portion of the incrusting zoarium, $\times 20$. The very small apertura with wide triangular rimule and the convex frontal are distinctive characters.
Upper Jacksonian (Ocala limestone); One and one-half miles above Bainbridge, Georgia.
Cat. No. 64055, U.S.N.M.
- FIGS. 4-12. *Schizomarella granulifera*, new species (p. 355).
4. Three fragments of the bilamellar zoarium, natural size.
5. Zooecia, $\times 20$, with the frontal granulation and the separating ridge quite prominent.
6. A specimen, $\times 20$, in which the zooecial margins are not elevated. The avicularium is very close to the apertura.
Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 64056, U.S.N.M.
7. An example, $\times 20$, with ovicelled zooecia. The broken ovicell shows that it covered much of the apertura.
Middle Jacksonian; Rich Hill, Crawford County, Georgia.
Cat. No. 64057, U.S.N.M.
8. A fragment, $\times 20$, with salient frontal granulations and no bordering ridge. Two zooecia have ovicells (broken).
9. Ordinary zooecia, $\times 20$, exhibiting both rounded and pointed avicularia. The avicularium is far removed from the apertura.
10. An example, $\times 20$, in which the granulations are scarcely visible. The zooecia are much elongated.
11. View of the interior of the zooecia, $\times 20$, showing the smooth olocyst and the shape of the apertura.
12. Tangential thin section, $\times 100$, illustrating structure of the frontal wall and showing the tremocyst placed on the olocyst.
Middle Jacksonian; Baldock, Barnwell County, South Carolina.
Cat. No. 64058, U.S.N.M.
- FIGS. 13-16. *Schizomarella granulosa*, new species (p. 356).
13. Surface of the incrusting zoarium, $\times 20$, with both ordinary and ovicelled zooecia.
14. Portion of surface, $\times 20$. The bordered ovicell, entirely surrounding the apertura, is quite visible.
15. Several ordinary zooecia, $\times 20$, one of which has been replaced by a regenerated avicularian zooecium.
16. Zooecia, $\times 20$, in which the granular surface is well preserved.
Upper Jacksonian (Ocala limestone); One and one-half miles above Bainbridge, Georgia.
Cat. No. 64059, U.S.N.M.
- FIG. 17. *Schizomarella elongata*, new species (p. 357).
Surface of the bilamellar type-specimen, $\times 20$. Several calcified zooecia may be noted. The great length of the zooecia and the position of the median avicularium in a cavity are also to be observed.
Middle Jacksonian; Three and one-half miles north of Grovania, Georgia.
Cat. No. 64060, U.S.N.M.
- FIG. 18. *Arthropoma nictula*, new species (p. 352).
The bilamellar type specimen, $\times 20$, with only ovicelled zooecia developed.
Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 64061, U.S.N.M.
- FIG. 19. *Dakaria brevis*, new species (p. 360).
The laminar incrusting zoarium, $\times 20$, showing ovicelled and ordinary zooecia. Several calcified zooecia are developed.
Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 64062, U.S.N.M.
- FIG. 20. *Dakaria luxata*, new species (p. 360).
The incrusting zoarium, $\times 20$. The large zooecia and absence of avicularia are to be noted.
Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 64063, U.S.N.M.

PLATE 47.

FIGS. 1, 2. *Metroporiella* ? *albora*, new species (p. 361).

1. The unilamellar zoarium, $\times 20$. The small median avicularium, the white peristome and the four large tremopores about the apertura are the specific features.
2. Sketch of the apertura.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64064, U.S.N.M.

FIGS. 3-6. *Metroporiella grandipora*, new species (p. 362).

3. Ordinary and ovicelled zooecia of the incrusting zoarium, $\times 20$. The frontal area of the latter is usually lost in fossilization.
4. Small portion of an example with broad zooecia, $\times 20$.
5. Basal side of zoarium, $\times 20$, with hydrostatic tuberosities.
6. Surface of zoarium, $\times 20$, exhibiting long zooecia. The avicularian zooecia with vestibular arch are visible near the top of the figure.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64065, U.S.N.M.

FIGS. 7-11. *Metroporiella porosa*, new species (p. 362).

7. Fragment of the free, bilamellar zoarium, natural size.
8. Normal zooecia, $\times 20$, bounded by a salient thread. Two avicularian zooecia and a calcified one between them are to be noted in the upper part of the figure.
9. Another surface, $\times 20$, with broken ovicells and long avicularia.
10. An example, $\times 20$, showing normal and ovicelled zooecia.
11. Zooecia, $\times 20$, preserving avicularia with a very long beak.

Middle Jacksonian: Near Lenuds Ferry, South Carolina.

Cat. No. 64066, U.S.N.M.

FIGS. 12-19. *Metroporiella biplanata* Cam and Bassler, 1917 (p. 361).

12. Wide zooecia, $\times 20$, with salient margins. The avicularia are broken.
13. Fragments of the bilamellar zoarium, natural size.
14. Normal fusiform zooecia, $\times 20$. The pores of the frontal are very small.
15. A well preserved zoarium, $\times 20$, exhibiting normal, ovicelled and closed zooecia. The ovicell completely surrounds the apertura.
16. Elongate zooecia with marginal elevations, $\times 20$. A crescent-shaped cicatrix of unknown use is above many of the zooecia.
- 17-19. Three sketches of the apertura, $\times 72$, showing variation in outline.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

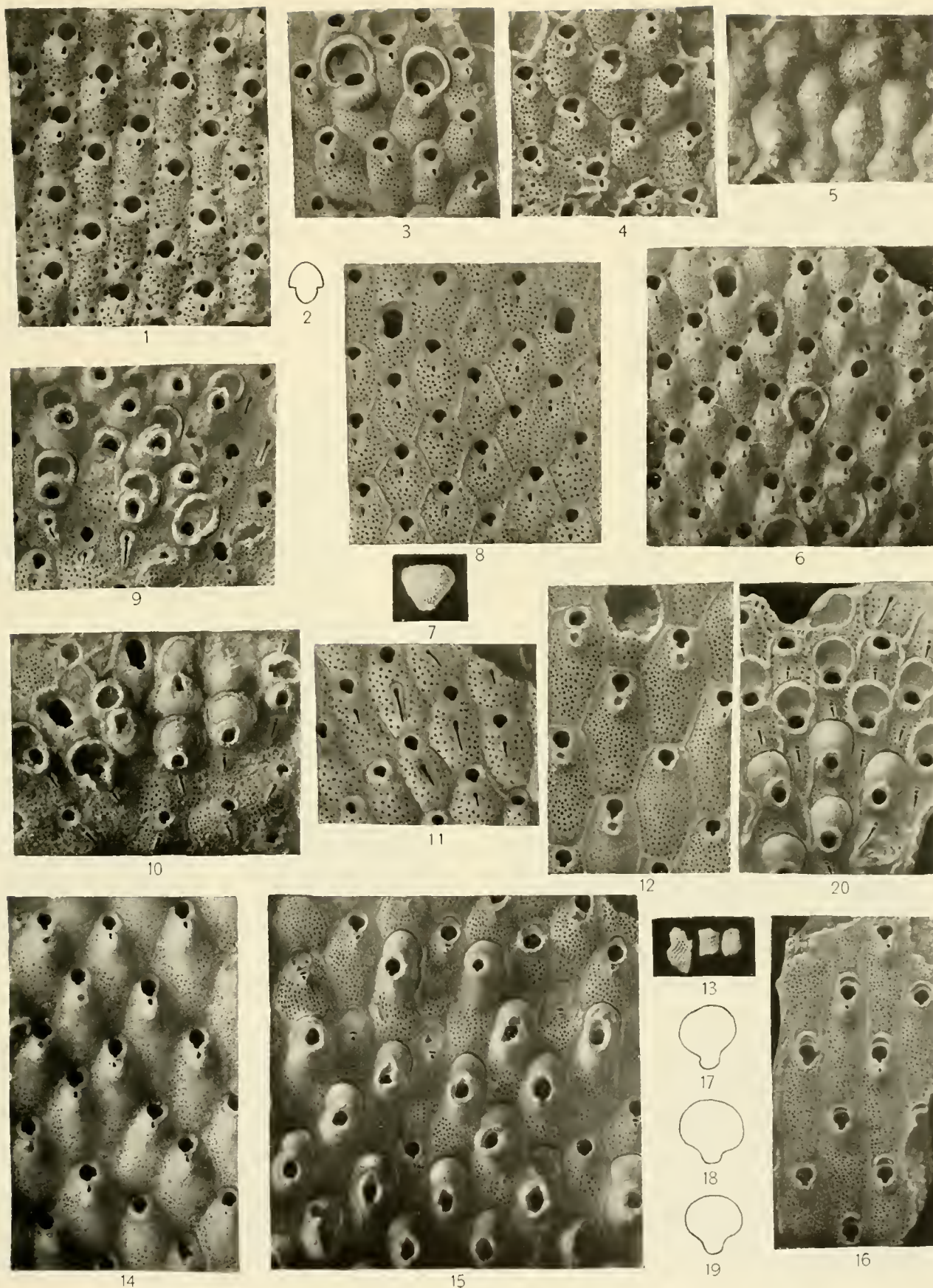
Cat. No. 62590, U.S.N.M.

FIG. 20. *Metroporiella latipora*, new species (p. 365).

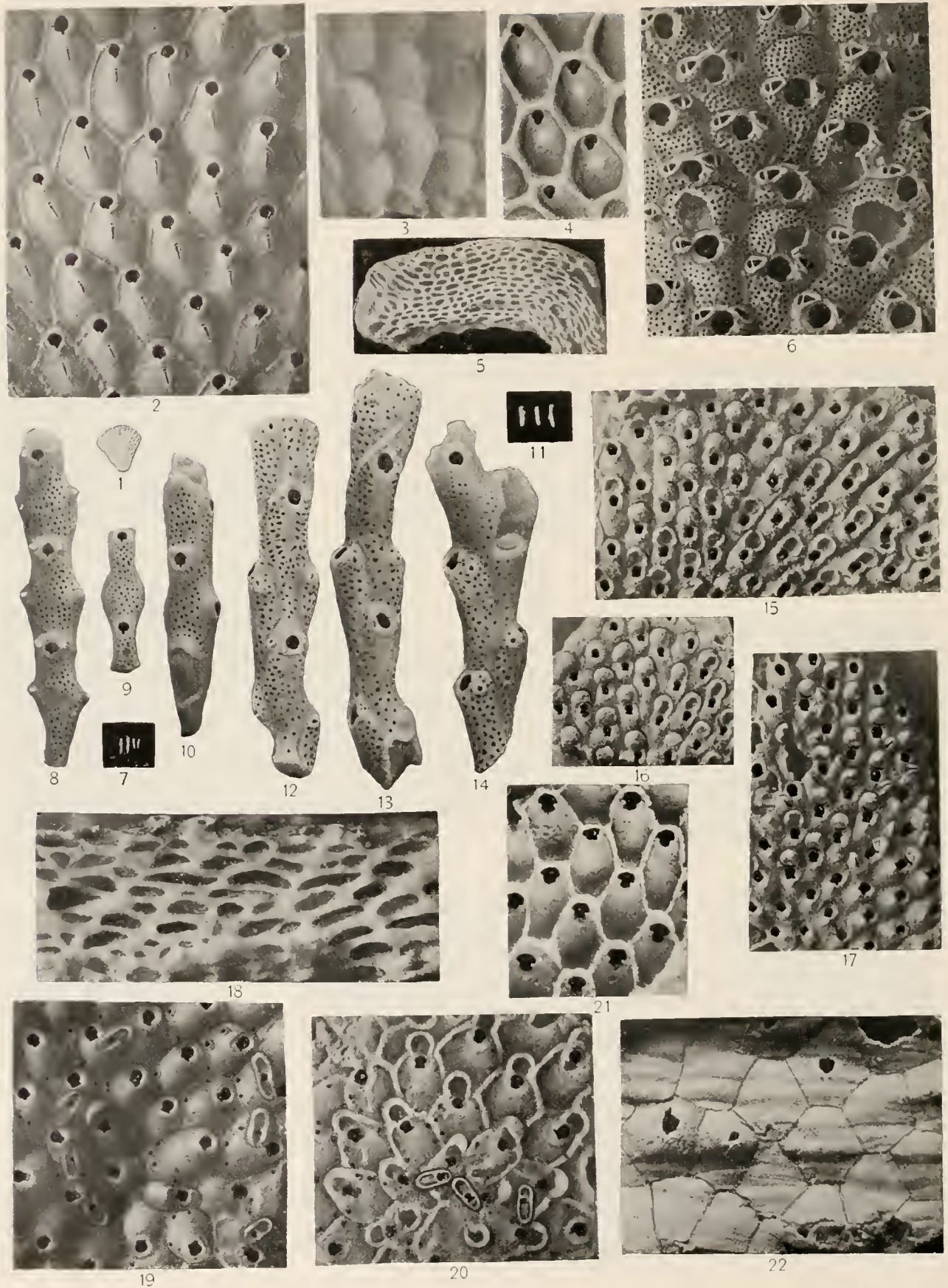
The bilamellar zoarium, $\times 20$, with normal and ovicelled zooecia.

Middle Jacksonian: Rich Hill, Crawford County, Georgia.

Cat. No. 64067, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 48.

FIGS. 1-5. *Metroporiella acerrata*, new species (p. 365).

1. A fragment of the multilamellar zoarium, natural size.
 2. Surface of the same specimen, $\times 20$. The hexagonal zooecia with smooth frontal, and salient bordering thread are to be noted.
 3. Basal surface of zooecia, $\times 20$.
 4. View of the interior, $\times 20$, showing the rimule, smooth frontal and place of avicularium.
 5. Edge view of a zoarium, $\times 5$, showing the many superimposed zooecial layers.
- Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 64068, U.S.N.M.

FIG. 6. *Emballothecca laticapitata*, new species (p. 366).

- Surface of the free bilamellar zoarium, $\times 20$. The ovicell is enormous and occupies a large part of the distal zooecium.
- Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 64069, U.S.N.M.

FIGS. 7-10. *Tetraptaria tuberculata*, new species (p. 368).

7. Four segments, natural size.
 8. A well preserved segment, $\times 20$, with the oral tubercles prominent.
 - 9, 10. Two fragments, $\times 20$, showing the appearance when slightly worn.
- Upper Jacksonian (Ocala limestone); Chipola River, east of Marianna, Florida.
Cat. No. 64070, U.S.N.M.

FIGS. 11-14. *Tetraptaria caudifera*, new species (p. 368).

11. Three segments, natural size.
 - 12-14. The same specimens, $\times 20$, illustrating three aspects of the species.
- Middle Jacksonian; Baldock, Barnwell County, South Carolina.
Cat. No. 64071, U.S.N.M.

FIGS. 15-17. *Hippoporella lucens*, new species (p. 376).

15. The incrusting zoarium, $\times 20$, with frontal covered by a calcareous deposit.
- Vicksburgian ("Chimney rock" of Marianna limestone) One mile north of Monroeville, Alabama.
Cat. No. 64072, U.S.N.M.
16. Zooecia, $\times 20$, showing shape of the apertura clearly.
- Upper Jacksonian (Ocala limestone); Bainbridge, Georgia.
Cat. No. 64073, U.S.N.M.
17. The incrusting zoarium, $\times 20$. The broken ovicells show two distinct layers.
- Vicksburgian (Byram marl); Byram, Mississippi.
Cat. No. 64074, U.S.N.M.

FIGS. 18-22. *Hippoporella multilamellosa*, new species (p. 378).

18. Edge view of the many-layered zoarium, $\times 20$.
 19. Surface, $\times 20$, illustrating form of apertura, occurrence of areolae and avicularia.
 20. Surface view of ovicelled zooecia, $\times 20$, with several spatulate avicularia.
 21. Interior of zooecia, $\times 20$, showing the two salient condyles of the apertura.
 22. Basal side of zoarium, $\times 20$, exhibiting hexagonal zooecia transversely striated.
- Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
Cat. No. 64075, U.S.N.M.

PLATE 49.

FIGS. 1-3. *Hippoporina biporosa*, new species (p. 377).

1. Normal and ovicelled zooecia of the inersting zoarium, $\times 20$, showing shape of aperture and occurrence of the avicularia.
2. Another portion of the same zoarium, $\times 20$.
3. The ancestrula and surrounding zooecia, $\times 20$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64076, U.S.N.M.

FIGS. 4-14. *Hippomucella rotula*, new species (p. 381).

4. Fragment of the bifoliate zoarium, $\times 20$, preserving several monstrous zooecia similar to the cumulate zooecia of the Celleporidae.
5. Portion of a zoarium, $\times 20$, with narrow zooecia, salient mucro and no avicularia.
6. Another fragment, $\times 20$, exhibiting avicularia and wide zooecia.
7. Very large ovicelled zooecia, $\times 20$.
8. Ordinary and ovicelled zooecia, $\times 20$, with avicularia.
9. Ordinary zooecia wider than usual, $\times 20$.
10. Interior of the zooecia, $\times 20$ showing the olocyst and tremocyst and the form of the aperture.
11. Tangential thin section, $\times 25$, through zooecia without avicularia.
12. A tangential thin section, $\times 25$, in which the mucro and the avicularia are visible.

In this and the preceding figure the structure of the olocyst and tremocyst is quite plain.

13. Tangential thin section of several zooecia, $\times 100$.

14. Three fragments of the bifoliate zoarium, natural size.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 64077, U.S.N.M.

FIGS. 15-17. *Hippomucella transversata*, new species (p. 382).

15. Fragmentary portion of the bilamellar zoarium, natural size.
16. Ordinary zooecia, $\times 20$, showing the decidedly transverse arrangement of the avicularia.
17. Another zoarium, $\times 20$, preserving several broken ovicells.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

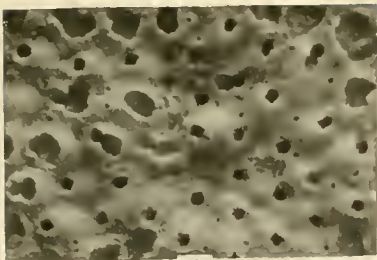
Cat. No. 64078, U.S.N.M.

FIGS. 18, 19. *Hippomucella angustacdes*, new species (p. 383).

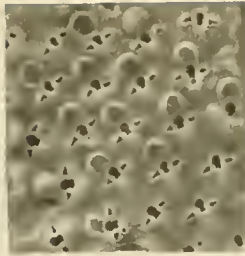
18. The narrow, free, bifoliate zoarium, natural size.
19. Portion of the same specimen, $\times 20$. There are four to six spines on the peristome.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

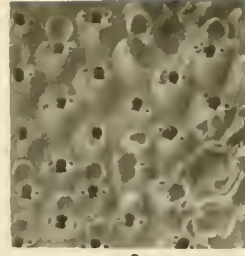
Cat. No. 64079, U.S.N.M.



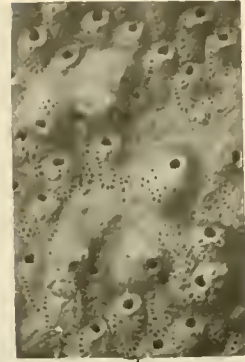
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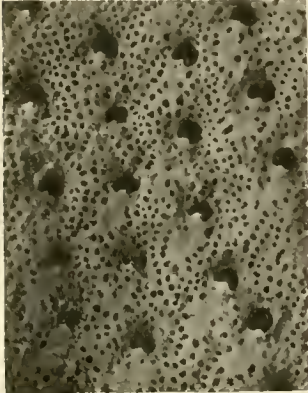
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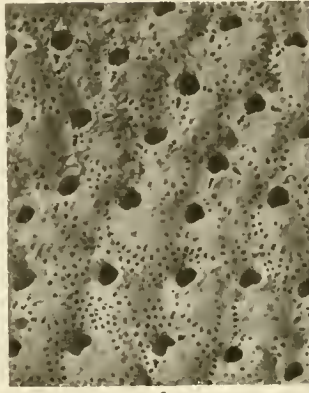
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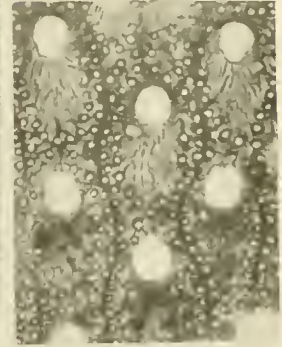
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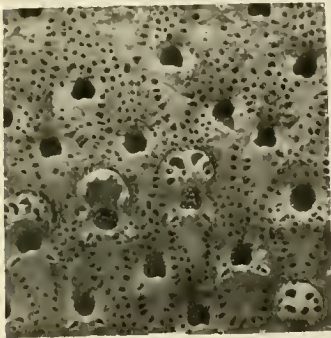
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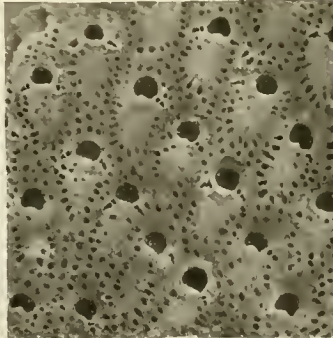
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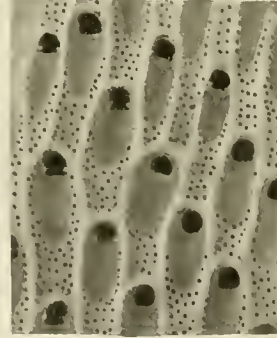
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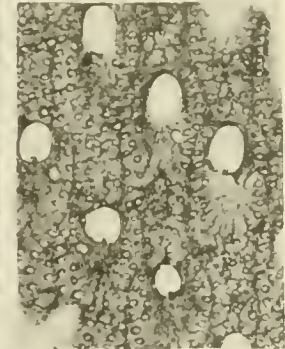
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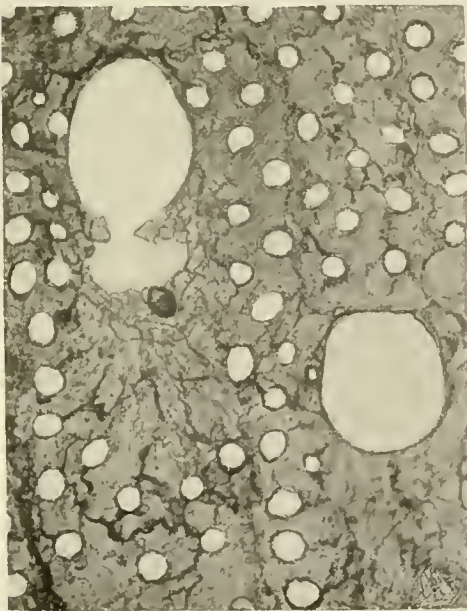
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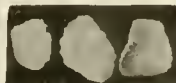
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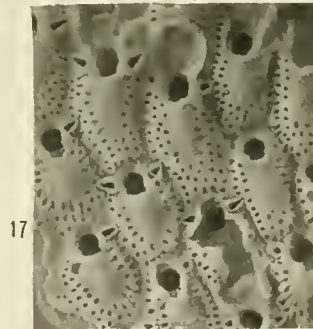
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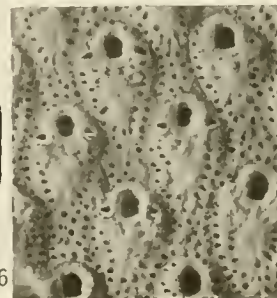
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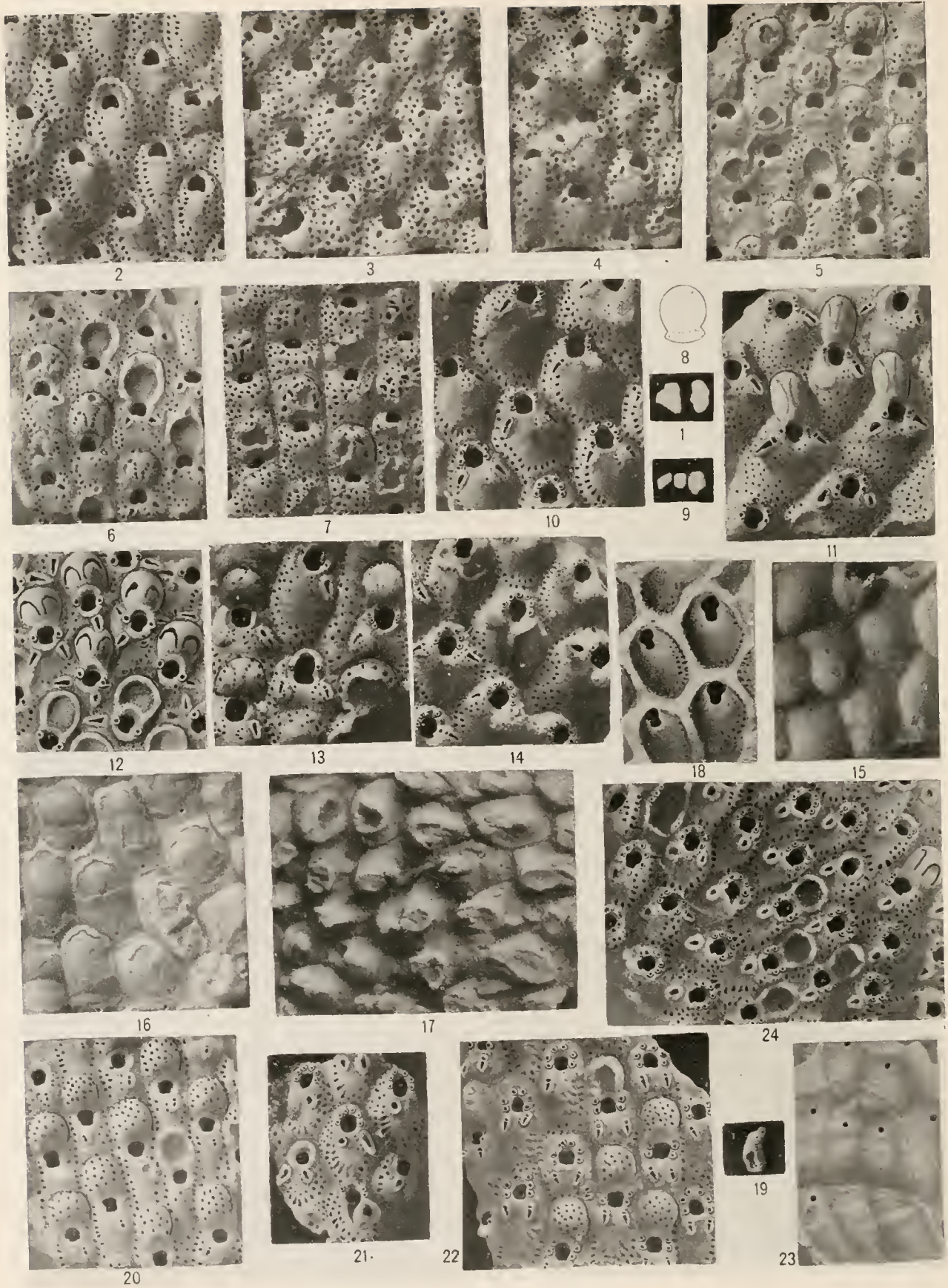
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JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 50.

FIGS. 1-8. *Hippomenella inconstita*, new species (p. 383).

1. Fragments of the free bilamellar zoarium, natural size.
2. A zoarium with long zooecia, $\times 20$. Lateral avicularia are wanting.
3. Short zooecia, $\times 20$.
4. Zooecia, $\times 20$, with an avicularian monstrosity developed.
5. Ovicelled zooecia, $\times 20$, showing the usual aspect.
Middle Jacksonian: Rich Hill, Georgia.
Cat. No. 64080, U.S.N.M.
6. Ovicelled zooecia, $\times 20$, in which the two lateral primitive areas are visible.
Middle Jacksonian: 17 miles northeast of Hawkinsville, Georgia.
Cat. No. 64081, U.S.N.M.
7. Ovicelled zooecia, $\times 20$, with the usual irregular punctations on the ovicells.
8. Sketch of the interior of an apertura, illustrating the mucronoid protuberance and the cardelles.
Middle Jacksonian: Three and one-half miles north of Grovania, Georgia.
Cat. No. 64082, U.S.N.M.

FIGS. 9-18. *Hippomenella alifera*, new species (p. 386).

9. Small fragments of the unilamellar zoarium, natural size.
10. Normal zooecia, $\times 20$, in which the areolae are arranged in two or three rows and the avicularia are short and irregularly arranged.
11. Normal and ovicelled zooecia, $\times 20$. The frontal is almost covered with areolae, the ovicells are pyriform, and the avicularia are large and winglike.
12. Zooecia, $\times 20$, with globular ovicells on which the two areas are well marked.
13. Normal and ovicelled zooecia, $\times 20$.
14. Normal zooecia, $\times 20$, in which the spines and the avicularian protuberances are well developed.
15. Smooth lower face of zoarium, $\times 20$.
16. Dorsal of zoarium, $\times 20$, showing the two layers, olocyst (inner) and pleurocyst (outer).
17. An example, $\times 20$, in which large hydrostatic tuberosities occur.
18. View of the interior, $\times 20$, showing the larger porta separated from the smaller vanna by two cardelles.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64083, U.S.N.M.

FIGS. 19-24. *Hippomenella radicata*, new species (p. 387).

19. The unilamellar zoarium, natural size, which has grown about an alga.
20. Ovicelled zooecia, $\times 20$, in which the two areas of the ovicell are replaced by punctations.
21. Normal zooecia, $\times 20$, with and without interareolar costules.
22. Normal and ovicelled zooecia, $\times 20$, with symmetrical avicularia.
23. Lower face of zooecia, $\times 20$, transversely striated and pierced by a pore.
Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 64084, U.S.N.M.
24. Zoarium, $\times 20$, showing zooecia with well-developed spines and vestibular arch. The single ovicell intact exhibits the two areas. This is the most usual aspect.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64085, U.S.N.M.

PLATE 51.

FIGS. 1-3. *Hippomencella punctata*, new species (p. 389).

1. The incrusting zoarium, natural size, growing over a bryozoan.
2. Surface of the same, $\times 20$. The areolae and the spines on the peristome are quite distinct.
3. Portion of a zoarium incrusting a shell, $\times 20$, showing ovicelled zooecia.
Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 64086, U.S.N.M.

FIGS. 4, 5. *Hippomencella tuberosa*, new species (p. 391).

- 4, 5. Surface of the incrusting type-specimen, $\times 20$, and the same, natural size. The frontal tuberosities are plainly shown.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64087, U.S.N.M.

FIGS. 6-9. *Hippomencella ligulata*, new species (p. 390).

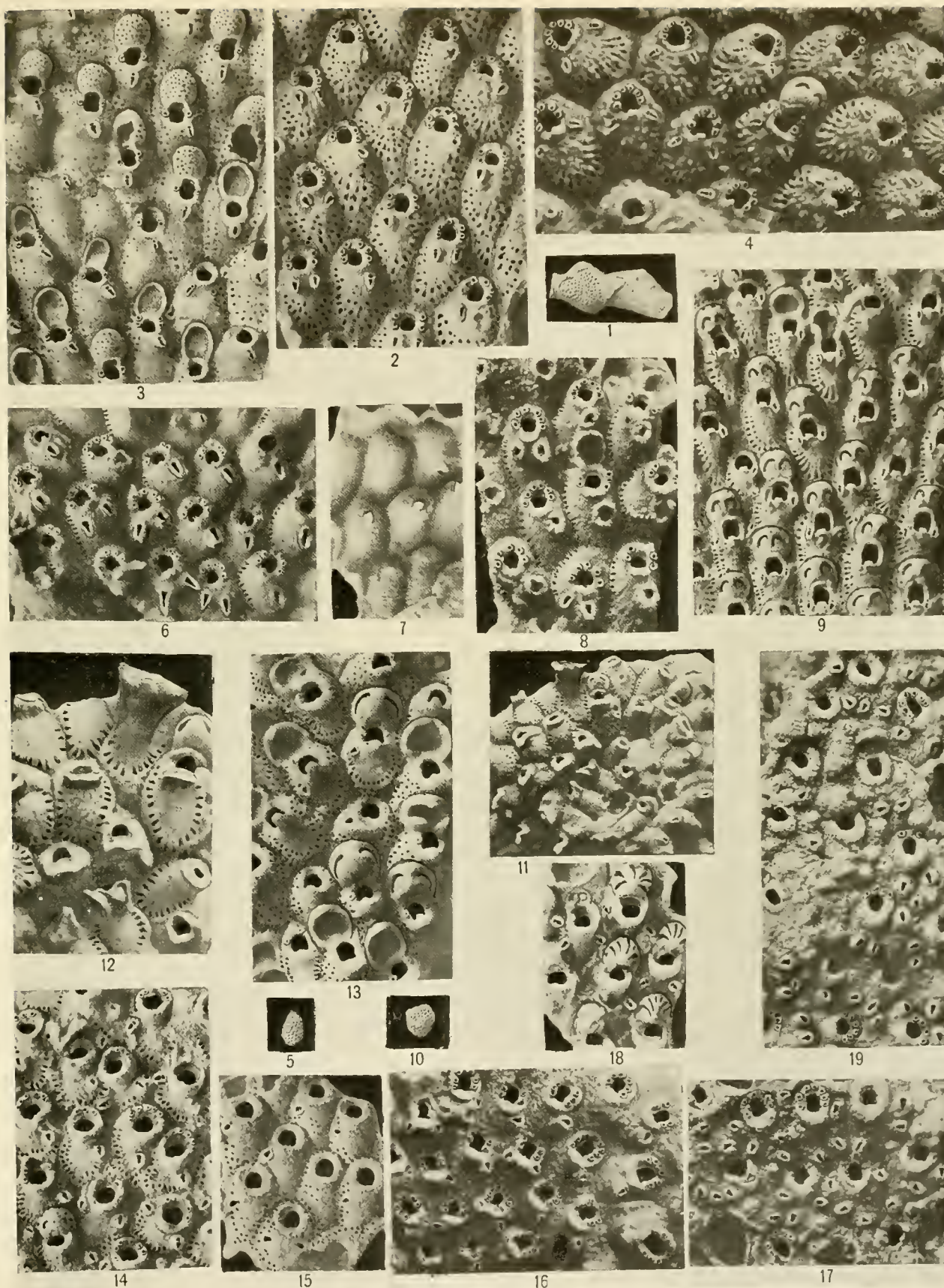
6. The typical form of the incrusting zoarium, $\times 20$, with avicularium removed from the aperture, and quite projecting.
7. Basal surface of zoarium, $\times 20$. Some of the zooecia are smooth and others have a hydrostatic projection.
8. Zoarium of the typical form with ovicelled zooecia, $\times 20$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64088, U.S.N.M.
9. A well preserved example, $\times 20$. The erect mucro and the characters of the ovicell are to be noted. This probably represents a variation with avicularia close to the aperture.
Middle Jacksonian: Near Lenuds Ferry, South Carolina.
Cat. No. 64089, U.S.N.M.

FIGS. 10-13. *Hippomencella ariculata*, new species (p. 391).

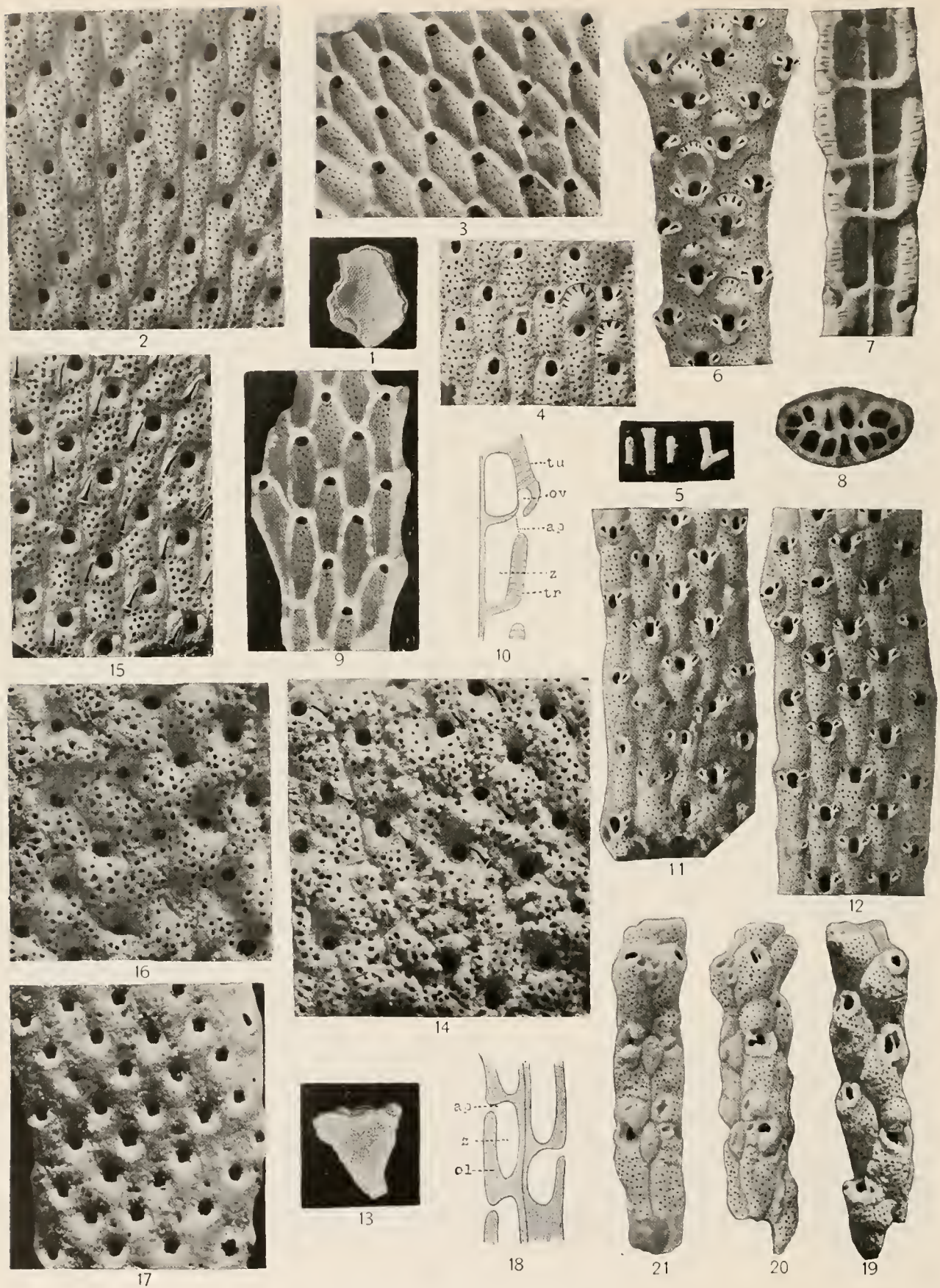
10. Small incrusting zoarium, natural size.
11. Surface of the same, $\times 10$.
12. Portion of figure 11, $\times 20$, showing variation in form and elevation of the mucro.
13. Another zoarium, $\times 20$, with ovicelled zooecia.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64090, U.S.N.M.

FIGS. 14-19. *Hippomencella crassicolis*, new species (p. 391).

14. The incrusting zoarium, $\times 20$, showing the normal aspect of the zooecia.
Vicksburgian (Marianna limestone): Near Claiborne, Monroe County, Alabama.
Cat. No. 64091, U.S.N.M.
15. Zooecia, $\times 20$, without ovicells, and little calcified. The avicularia are small.
Vicksburgian (Byram marl): Near Woodward, Wayne County, Mississippi.
Cat. No. 64092, U.S.N.M.
16. Zooecia, $\times 20$, with the frontal strongly calcified but with the avicularia regularly placed and the peristomial spines quite visible.
Upper Jacksonian (Ocala limestone): Alachua, Florida.
Cat. No. 64093, U.S.N.M.
17. Portion of a zoarium, $\times 20$, with intense pleurocystal calcification. The avicularia are irregularly placed.
18. Zooecia, $\times 20$, with costulate ovicells.
19. A zoarium, $\times 20$, in which the avicularia are of unequal prominence and are irregularly arranged.
Vicksburgian (Marianna limestone): Near Claiborne, Monroe County, Alabama.
Cat. No. 64091, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 52.

FIGS. 1-4. *Hippodiplosia petiolus* Lonsdale, 1845 (p. 335).

1. Portion of the large bilamellar zoarium, natural size.
2. Surface of the same specimen, $\times 20$. The shape of the aperture, the tremocystal frontal and the absence of avicularia are to be noted.
3. Interior of the zooecia, $\times 20$. The frontal is a tremocyst placed upon a very thin olocyst.
4. An example, $\times 20$, preserving several ovicelled zooecia. A few avicularia are also present.

Middle Jacksonian; Eutaw Springs, South Carolina.

Cat. No. 64094, U.S.N.M.

FIGS. 5-12. *Hippodiplosia resperillo*, new species (p. 394).

5. Four examples of the narrow bifoliate fronds, natural size.
6. An example, $\times 20$, exhibiting ovicelled zooecia. The ovicell is surrounded by areolae.
7. Longitudinal section, $\times 20$. The tubules of the tremocyst and the large distal septula are visible.
8. Transverse section of zoarium, $\times 20$.
9. View of the interior, $\times 20$. The tubules of the tremocyst are visible through the olocyst.
10. Schematic longitudinal section through an ovicell, $\times 20$.
ap., aperture; *ov.*, ovicell; *tr.*, tremocyst; *tu.*, tubules; *z.*, zooecium.
11. Lower part of a zoarium, $\times 20$, with some closed zooecia.
12. The upper portion of the same specimen, $\times 20$, showing the normal development of zooecia.

Middle Jacksonian; Near Lenuds Ferry, South Carolina.

Cat. No. 64095, U.S.N.M.

FIGS. 13-16. *Hippodiplosia falcifera*, new species (p. 395).

13. Basal portion of the free bilamellar zoarium, natural size.
14. Surface of the same specimen, $\times 20$, exhibiting the usual aspect of the species.
15. A well-preserved fragment, $\times 20$, in which the falciform avicularia are clearly discernible.
16. Old zooecia, $\times 20$. The outlines are indistinct and the avicularia are immersed.

Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.

Cat. No. 64096, U. S. N. M.

FIGS. 17, 18. *Houzeauina librata*, new species (p. 423). (See also pl. 55, figs. 1-5.)

17. Surface of the free, narrow bilamellar zoarium, $\times 20$, exhibiting the smooth frontal and the two areola like pores.
18. Vertical section, $\times 20$, illustrating thickness of the olocyst.
ap., aperture; *ol.*, olocyst; *z.*, zooecium.

Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.

Cat. No. 64097, U.S.N.M.

FIGS. 19-21. *Hippozugosella distorta*, new species (p. 396).

19. Celluliferous side of the free, subcylindrical zoarium, $\times 20$. The peristome with peristomial avicularium, the convex, porous frontal and an ovicelled zooecium are to be noted.
20. Frontal side of the same specimen, $\times 20$.
21. One of the two lateral sides of the same, $\times 20$, showing three zooeciules.

Middle Jacksonian; Eighteen miles west of Wrightsville, Georgia.

Cat. No. 64098, U.S.N.M.

PLATE 53.

FIGS. 1-6. *Hippozugosella teges* Canu and Bassler, 1917 (p. 399).

1. Dorsal side of the free, erect, unilamellar zoarium, $\times 20$.
- 2, 3. Celluliferous side of two normal fragments, $\times 20$.
4. A specimen, $\times 20$, exhibiting formation of a new branch.
5. A triserial branch, $\times 20$.
6. Dorsal side of a triserial fragment, $\times 20$.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Florida.
Cat. No. 62591, U.S.N.M.

FIGS. 7, 8. *Hippozugosella scordiuata*, new species (p. 402).

7. The free cylindrical zoarium, $\times 20$.
8. Fragment of a more foliaceous zoarium, $\times 20$.

Upper Jacksonian (Ocala limestone): Alachua, Florida.
Cat. No. 64099, U.S.N.M.

FIGS. 9-11. *Hippozugosella marginata*, new species (p. 401).

9. The free bilamellar zoarium, $\times 20$, with the zooecia separated by a salient thread.
10. Another specimen, $\times 20$, with the first zooecium of a new branch.
11. View, $\times 20$, showing the two lamellae separated by zooeciules.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 64100, U.S.N.M.

FIGS. 12-20. *Hippozugosella inflata*, new species (p. 401).

12. The free bilamellar zoarium, $\times 20$, formed of young zooecia. These have a small distal tongue.
13. Another small fragment, $\times 20$.
14. Zoarium, $\times 20$, with very convex zooecia, illustrating the most frequent aspect of the species.
15. Fragment, $\times 20$, bearing a branch.
16. Wide zooecia, $\times 20$, enlarged by calcification.

Middle Jacksonian: One-half mile southeast of Georgia Kaolin Company's Mine, Twiggs County, Georgia.

Cat. No. 64101, U.S.N.M.

- 17, 19. Lateral face, $\times 20$, with zooeciules intercalated between the two lamellae.

18. Lateral view, $\times 20$. The two lamellae are not separated by zooeciules.

20. Base of a branch, $\times 20$, view from below. The section of three primary zooecia is visible.

Middle Jacksonian: Baldock, Barnwell County, South Carolina.

Cat. No. 64102, U.S.N.M.

FIGS. 21-25. *Hippozugosella arcuata*, new species (p. 400).

21. Lateral view of the free bilamellar zoarium, $\times 20$, exhibiting the zooecia and the small tongue quite clearly.

22. Frontal view of normal zooecia, $\times 20$.

23. Another edge view, $\times 20$.

24. Four zooecia, $\times 20$, two of which are ovicelled.

25. A triserial fragment, $\times 20$, arising from a single zooecium.

Lower Jacksonian (Moody marl): Jackson, Mississippi.

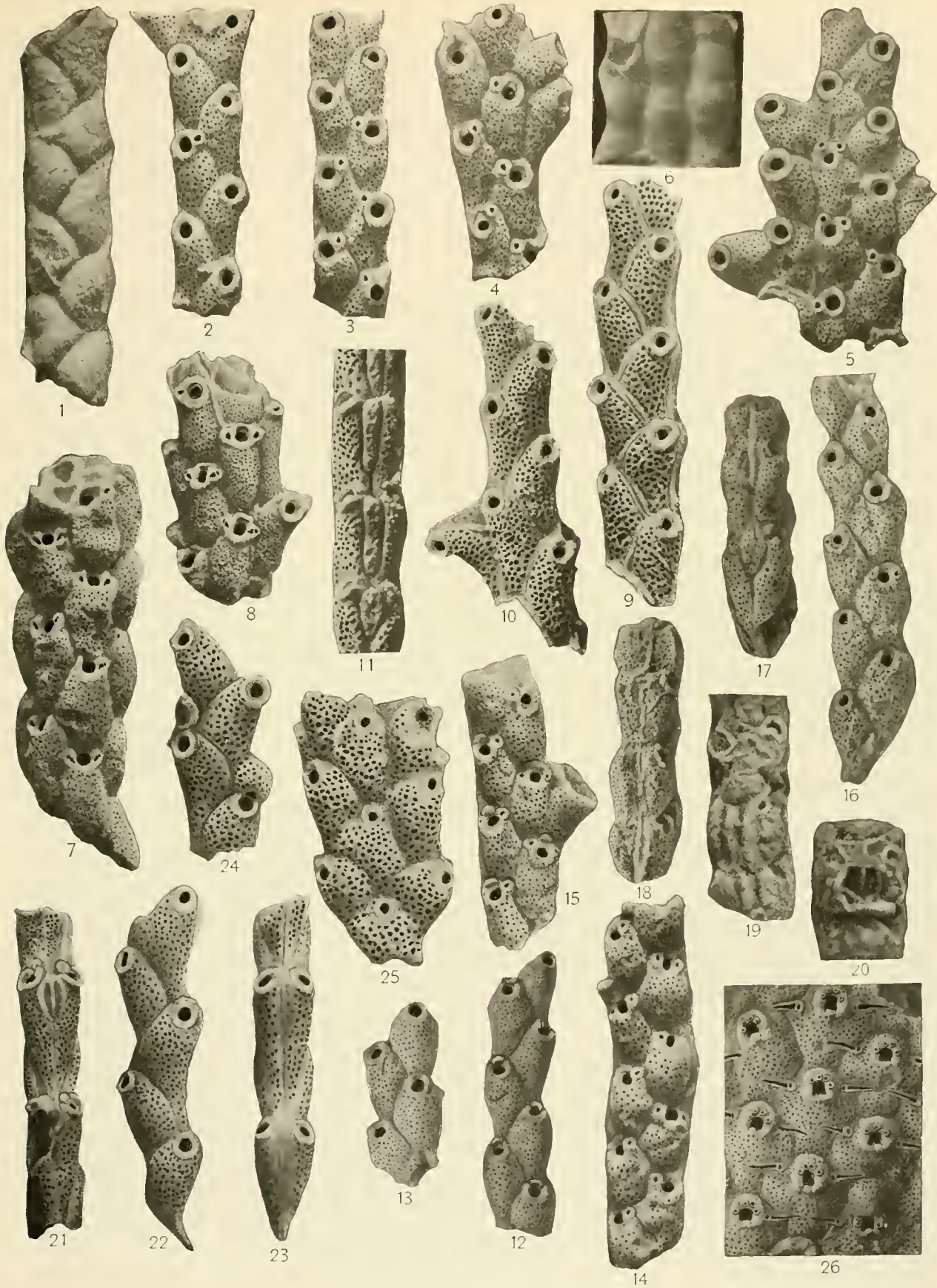
Cat. No. 64103, U.S.N.M.

FIG. 26. *Romancheina hexagona*, new species (p. 407).

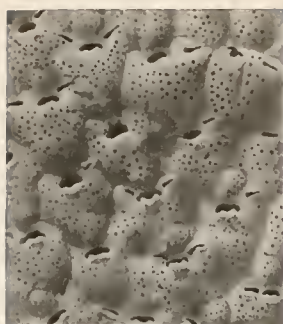
Surface of the incrusting zoarium, $\times 20$, exhibiting normal and ovicelled zooecia.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

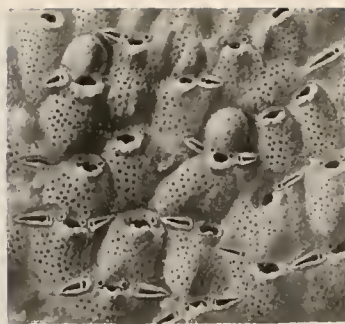
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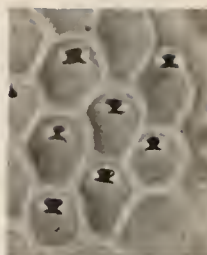
JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



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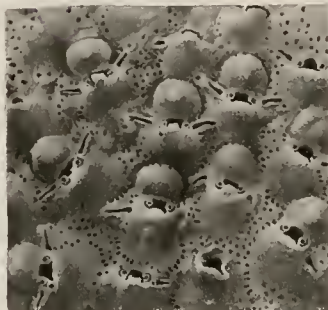
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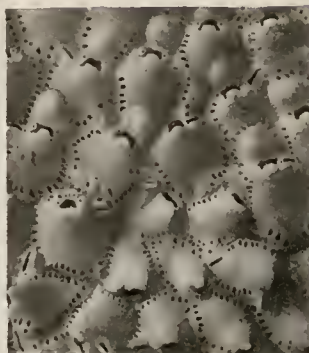
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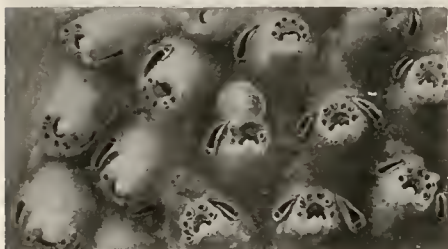
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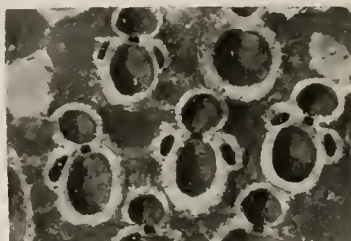
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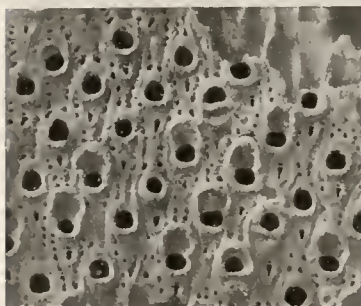
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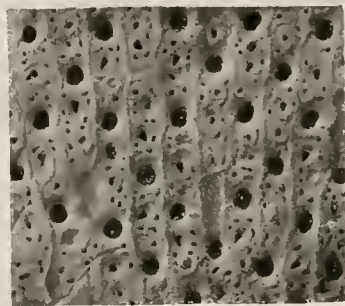
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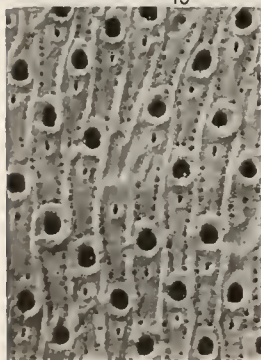
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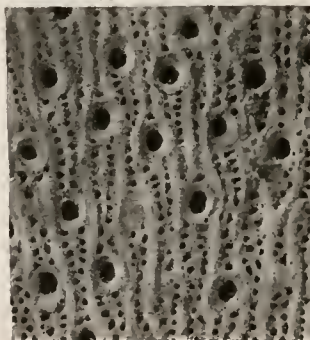
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JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 54.

FIGS. 1-4. *Romanchina parvipunctata*, new species (p. 408).

1. The incrusting zoarium, $\times 20$, with zooecia having a prominent muero and irregularly developed avicularia.
2. Another zoarium, $\times 20$, with well developed ovicelled zooecia. Two spines to a zooecium is the rule on this specimen.
3. View of the interior, $\times 20$. Two large condyles border the aperture laterally.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64105, U.S.N.M.
4. Portion of a zoarium, $\times 20$, showing the ancestrula and surrounding zooecia, which have in this case four spines.
Middle Jacksonian: Near Lenuds Ferry, South Carolina.
Cat. No. 64106, U.S.N.M.

FIGS. 5-7. *Peristomella laticella*, new species (p. 413).

5. Ordinary zooecia of the incrusting zoarium, $\times 20$.
6. Ovicelled zooecia, $\times 20$. The areolae and the pleurocyst are well developed.
7. Ancestrula and surrounding zooecia, $\times 20$. The ancestrula is the small zooecium near the center of the figure.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64107, U.S.N.M.

FIGS. 8-10. *Peristomella falcifera*, new species (p. 415).

8. A well preserved zoarium of this incrusting species, $\times 20$, with both ordinary and ovicelled zooecia. The long falciform avicularium is quite evident, but the areolae are scarcely visible.
9. Ordinary zooecia (one ovicelled), $\times 20$, illustrating the bifid muero, the locella and the deeply buried apertura.
10. Interior of ovicelled zooecia, $\times 20$. The locella appears as a slit between the ovicell and the zooecium. The lateral openings are the falciform avicularia.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64108, U.S.N.M.

FIG. 11. *Houzeauina callosa*, new species (p. 423).

- The bilamellar type-specimen, $\times 20$. The perforated frontal callosity of the ovicell is characteristic.
Middle Jacksonian: 18 miles west of Wrightsville, Johnson County, Georgia.
Cat. No. 64109, U.S.N.M.

FIGS. 12-17. *Houzeauina ornata*, new species (p. 422).

12. Two fragments of the bilamellar zoarium, natural size.
13. Ordinary zooecia, $\times 20$, with large areolae and no avicularia.
14. Ordinary zooecia, $\times 20$, with small areolae and avicularia.
15. Zooecia with ovicells (broken), $\times 20$.
16. A zoarium, $\times 20$, with the pleurocyst well developed.
Middle Jacksonian: Baldock, Barnwell County, South Carolina.
Cat. No. 64110, U.S.N.M.
17. Interior of zooecia, $\times 20$, showing the thick olocyst with small lateral areolae and the triangular cavity of the avicularium arising from a lateral areola.
Middle Jacksonian: Rich Hill, Crawford County, Georgia.
Cat. No. 64111, U.S.N.M.

PLATE 55.

FIGS. 1-5. *Honzauina fibrata*, new species (p. 423). (See also plate 52, figs. 17, 18.)

1. Fragment of the bilamellar zoarium, natural size.
 2. Surface of a zoarium, $\times 20$, with the median avicularium developed and the areolae widely spaced.
 3. Another zoarium, $\times 20$, exhibiting two monstrous zooecia.
 4. An example, $\times 20$, with the two lower areolae much developed and as usual in such cases, the avicularia wanting.
 5. Interior of zooecia, $\times 20$, with the triangular avicularium visible.
- Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.
Cat. No. 64097, U.S.N.M.

FIG. 6. *Cyclicopora laticella*, new species (p. 427).

- The incrusting type-specimen, $\times 20$. The zooecia are wide and the frontal is adorned with large tremopores.
- Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.
Cat. No. 64112, U.S.N.M.

FIG. 7. *Cyclicopora fissurata*, new species (p. 425).

- Surface of the unilamellar zoarium, $\times 20$, showing the elongated zooecia with large tremopores and elongated thin avicularia.
- Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.
Cat. No. 64113, U.S.N.M.

FIGS. 8-11. *Metradolium labratulum*, new species (p. 441).

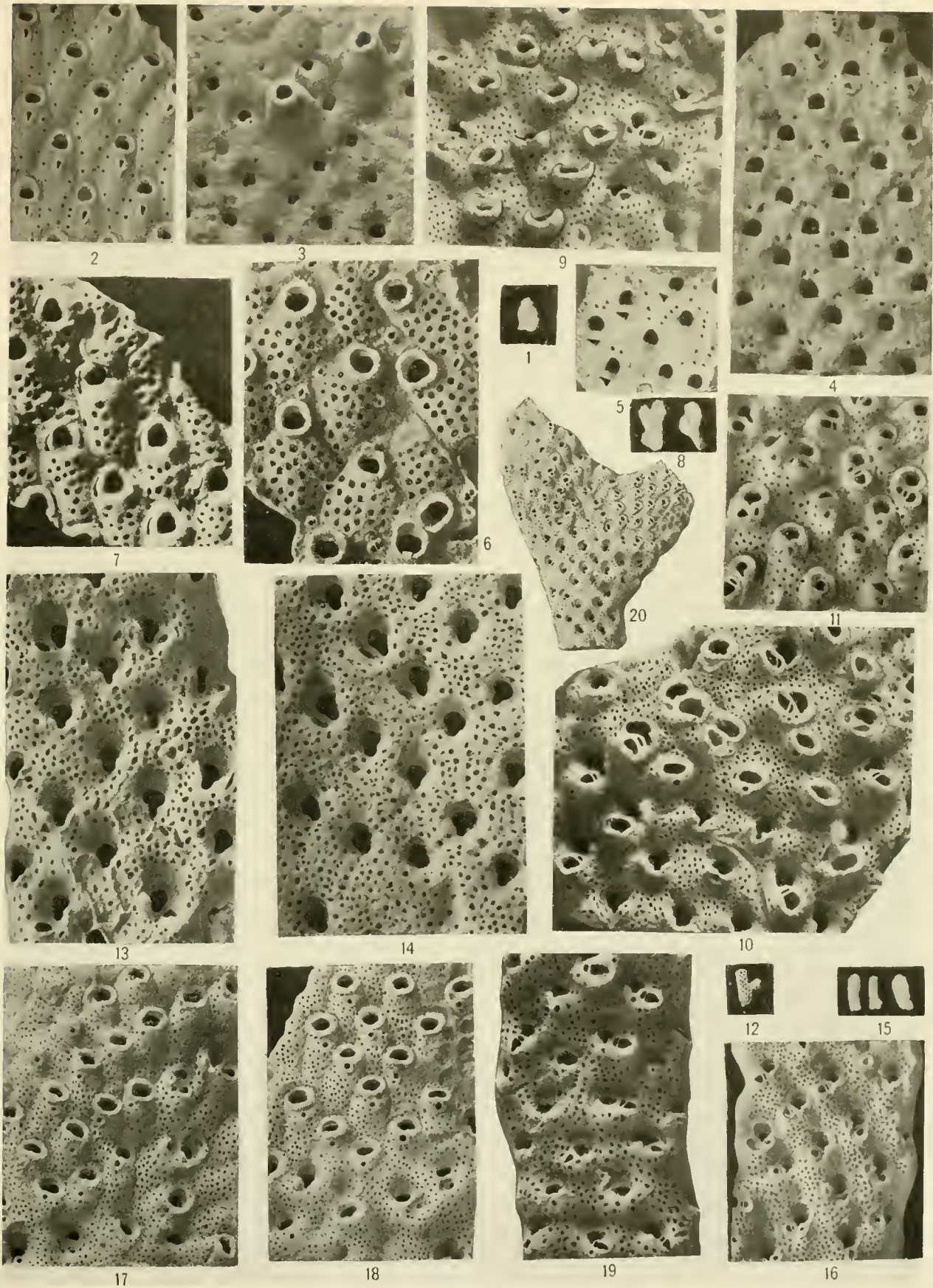
8. Two examples of the narrow bilamellar zoarium, natural size.
 9. Zooecia, $\times 20$, with the enormous mucro bearing at its base a spiramen. Several zooecia have an avicularium and then the spiramen is replaced by a rimule.
 10. Another zoarium, $\times 20$, having some zooecia with lateral rimule and avicularium and others with spiramen.
- Middle Jacksonian : One-half mile southeast of Georgia Kaolin Company's mine, Twiggs County, Georgia.
Cat. No. 64114, U.S.N.M.
11. A fragment, $\times 20$, in which most of the zooecia have the spiramen placed below a large lamellate mucro.
- Middle Jacksonian : Eighteen miles west of Wrightsville, Georgia.
Cat. No. 64115, U.S.N.M.

FIGS. 12-14. *Metradolium grande*, new species (p. 445).

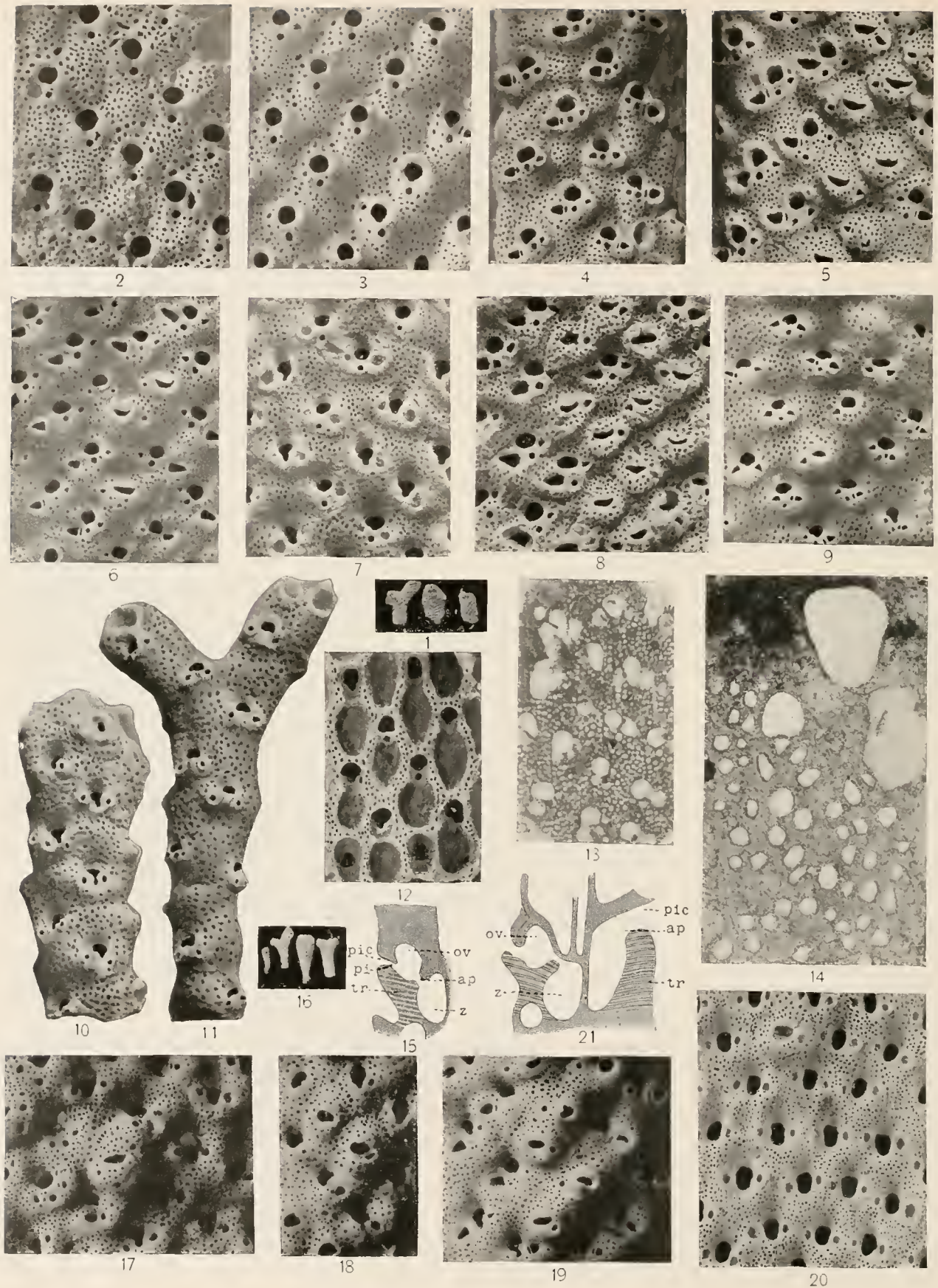
12. The narrow, bilamellar zoarium, natural size.
 13. Zooecia with the avicularia exterior, $\times 20$. The rimule-spiramen is well formed.
- Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.
Cat. No. 64116, U.S.N.M.
14. An old zoarium, $\times 20$, in which the avicularium is within the peristomie. The rimule spiramen is deep and irregular.
- Middle Jacksonian : Eutaw Springs, South Carolina.
Cat. No. 64117, U.S.N.M.

FIGS. 15-20. *Metradolium parvirimulatum*, new species (p. 443).

15. Three fragments, natural size.
 16. An example, $\times 20$, with zooecia having a very small rimule spiramen and normal avicularium.
 17. Another specimen, $\times 20$, exhibiting mainly zooecia with spiramen only. A few of the zooecia have a small avicularium.
 18. Zooecia with spiramen and no avicularia, $\times 20$, illustrating their arrangement in groups.
 19. A zoarium, $\times 20$, in which the principal avicularium is very large.
 20. A specimen, $\times 6$, having ordinary zooecia with rimule spiramen at the base and zooecia with spiramen in the upper part.
- Middle Jacksonian : Near Lenuds Ferry, South Carolina.
Cat. No. 64118, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 56.

FIGS. 1-15. *Metradolium dissimile* Cann and Bassler, 1917 (p. 442).

1. The free, narrow bilamellar zoarium, natural size.
- 2, 3. Two views of normal zooecia, $\times 20$, with a large spiramen and with the oral avicularia either absent or much reduced.
4. Normal zooecia, $\times 20$, with the spiramen and the two dissimilar avicularia, large and small, well developed.
- 5, 6. Normal and ovicelled zooecia, $\times 20$. The latter have a lunate opening and are without a spiramen.
7. Zooecia, $\times 20$, showing that the spiramen is often replaced by a rimule spiramen.
8. A group of ovicelled zooecia with adjacent normal zooecia, $\times 20$. The frontal of both kinds of zooecia is a tremocyst.
9. Another aspect of the species, $\times 20$, in which the avicularia are symmetrical and tubular.
- 10, 11. Young zoaria, $\times 20$. The avicularia are symmetrical and tubular and the micrometric dimensions are smaller.
12. Interior of zooecia, $\times 20$. Two zooecia have the round spiramen while the rest have a rimule spiramen. Several ovicelled zooecia, with the aperture in the middle, may be noted.
- 13, 14. Tangential thin section, $\times 25$ and $\times 100$, passing through the tremocyst.
15. Schematic vertical section, $\times 20$, cutting an ovicelled zooecium.
ap., apertura; *ov.*, ovicell; *pi.*, peristomie; *pic.*, peristomie; *tr.*, tremocyst; *z.*, zooecium.
 Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
 Cat. No. 62596, U.S.N.M.

FIGS. 16-21. *Metradolium conveniens*, new species (p. 445).

16. Four examples of the bilamellar zoarium, natural size.
17. Ordinary zooecia, $\times 20$, with rimule spiramen. One large ovicelled zooecium is developed.
18. An example, $\times 20$, showing ovicelled and ordinary zoaria.
19. Ovicelled and ordinary zooecia, $\times 20$. Some of the latter have only one large oral avicularium with pivot.
20. Surface of zoarium, $\times 20$, with ordinary zooecia having symmetrical avicularia and no rimule spiramen. One ovicelled zooecium is present.
21. Longitudinal section through a zoarium, $\times 20$, cutting both an ovicelled and an ordinary zooecium.
ap., apertura; *ov.*, ovicell; *pic.*, peristome; *tr.*, tremocyst; *z.*, zooecium.
 Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.
 Cat. No. 64119, U.S.N.M.

PLATE 57.

FIGS. 1-3. *Metradolium transversum*, new species (p. 444).

1. The free bilamellar zoarium, natural size.
2. Surface of the same specimen, $\times 20$. Some of the zooecia have oral avicularia.
3. Another zoarium, $\times 20$, showing some zooecia with lateral rimule and others with a convexity on the proximal border, which increases the transverse aspect of the peristomice.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64120, U.S.N.M.

FIGS. 4-10. *Metradolium obliquum*, new species (p. 446).

4. Fragment of the bilamellar zoarium, natural size.
5. Half of a branch, $\times 20$. The obliquely directed rimule spiramen and the oral avicularia are quite visible. One ovicelled zooecium is shown near the top.
6. A branch, $\times 20$, with three ovicelled zooecia in the center. The rimule spiramen on the ordinary zooecia is well developed.
7. Interior of zooecia, $\times 20$, showing the proximal spine of the apertura. The large transverse opening is that of an ovicelled zooecium.
8. Tangential thin section through the tremocyst, $\times 20$.
9. A single zooecium of the same, $\times 100$. In the middle of the figure a portion of the olocyst is visible.
10. Longitudinal section through a zoarium, $\times 20$, including both an ovicelled and an ordinary zooecium.

ap. apertura; *ol.* olocyst; *ov.* ovicell; *s.* septula; *tr.* tremocyst; *tu.* tubules.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

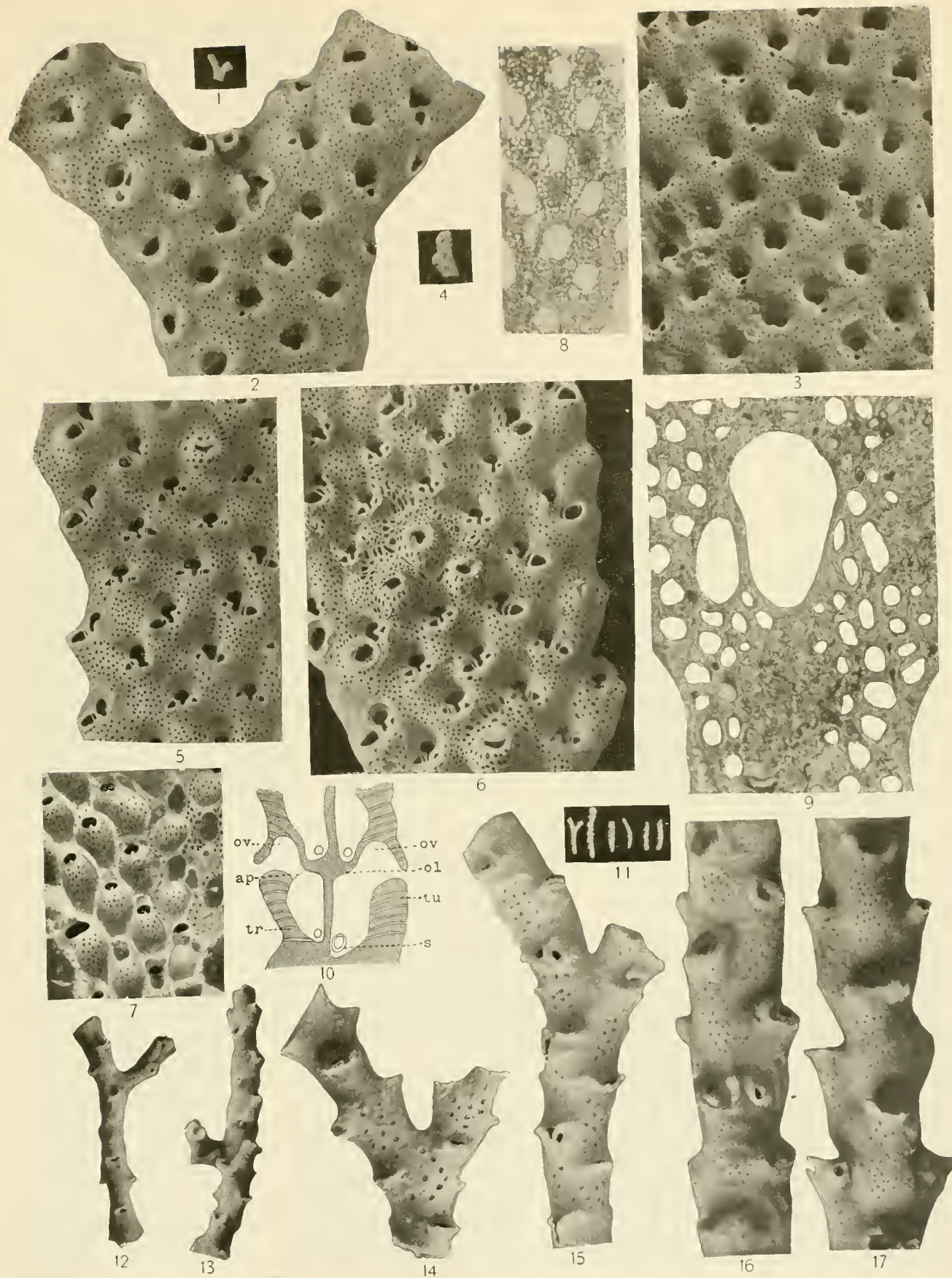
Cat. No. 64121, U.S.N.M.

FIGS. 11-17. *Ochelosella robusta*, new species (p. 453).

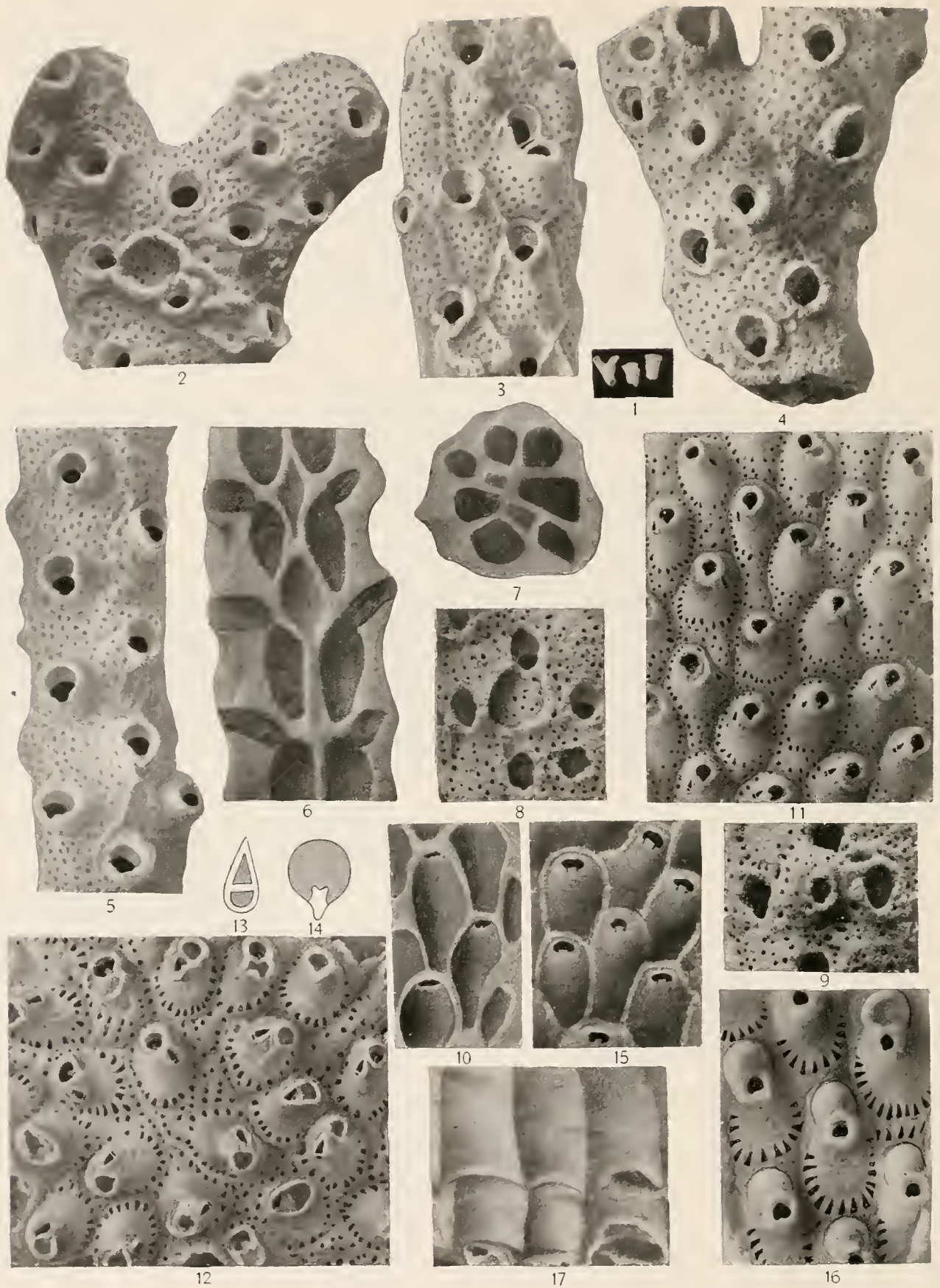
11. A group of the free, cylindrical zoaria, natural size.
12. 13. Two branching fragments, $\times 6$. The first specimen shows an inversion of zooecia.
14. A branched fragment $\times 20$.
15. An example, $\times 20$, showing the simple, round, oral avicularium.
16. 17. Two specimens, $\times 20$, illustrating variations in the species.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64122, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 58.

FIGS. 1-10. *Metrocrypta bucculenta* Camu and Bassler, 1917 (p. 451).

1. Three specimens of the free cylindrical zoarium, natural size.
2. A branched zoarium, $\times 20$, showing the apertura at the base of a deep peristomie.
A broken interzooeccial swelling is present.
3. Zooecia, $\times 20$, separated by a salient ridge. One oral avicularium is developed.
4. An old zoarium, $\times 20$, with zooecia having thickened peristomes.
5. A fragment, $\times 20$, in which the rimule spiramen is well shown.
6. Longitudinal section, $\times 20$, exhibiting the wide peristomie and the thick frontal walls.
7. Transverse section, $\times 20$, illustrating thickness of frontal walls.
8. Portion of a surface $\times 20$, with the ovicell-like swelling (broken).
9. A surface, $\times 20$, with the ovicell-like protuberance intact.
10. Interior of zooecia, $\times 20$. The apertura is almost invisible. The internal zooeccial walls are very thin.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 62598, U.S.N.M.

FIGS. 11-17. *Smittina collum*, new species (p. 457).

11. Surface of the multilamellar zoarium, $\times 20$. Here the areolae are small and arranged in several rows. The lyrula is visible in some zooecia. The peristome forms a decided collar around the opening.
12. Another zoarium, $\times 20$. The areolae are large and are often separated by costules. The avicularium is triangular and placed laterally.
13. Sketch of the avicularium.
14. Apertura with lyrula.
15. Interior of zooecia, $\times 20$, showing the smooth oloecyst and the lyrula.
16. Ovicelled zooecia, $\times 20$.
17. Basal side of a free fragment growing upon an alga, $\times 20$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64123, U.S.N.M.

PLATE 59.

FIGS. 1-6. *Smittina grandifossa*, new species (p. 460).

1. Surface of the plurilamellar incrusting zoarium, $\times 20$. The thread separating the zooecia is scarcely visible. Avicularia are absent.
2. Irregularly arranged zooecia, $\times 20$. The lyrula is visible in some of them.
3. Ovicelled zooecia, $\times 20$. The areolae are in double or triple rows in the lower part of the zooecia.
4. Ordinary zooecia, $\times 20$, in which the separating thread is quite thick.
5. Sketch of the apertura and the lyrula.
6. Interior of zooecia, $\times 20$, showing lyrula.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64124, U.S.N.M.

FIGS. 7-10. *Smittina labiatula*, new species (p. 460).

7. The free, cylindrical zoarium, $\times 20$. The areolae are small.
8. A normal zoarium, $\times 20$, exhibiting the characteristic salient lips of the peristomice.
9. Basal portion of a zoarium, $\times 20$, showing large areolae.
10. Vertical section, $\times 20$, through an ovicelled zooecium.

ap, apertura; *av*, avicularian armature; *ov*, ovicell; *pic*, peristomice; *z*, zooecium.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64125, U.S.N.M.

FIG. 11. *Smittina coronata*, new species (p. 461).

The unilamellar zoarium, $\times 20$. The ovicells have a porous area surrounded by a collar. The pleurocyst is granulated.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64126, U.S.N.M.

FIGS. 12-14. *Smittina strombecki* Reuss, 1866 (p. 463).

12. The incrusting zoarium, $\times 20$, showing ovicelled zooecia.

Middle Jacksonian: Eighteen miles west of Wrightsville, Georgia.

Cat. No. 64127, U.S.N.M.

13. Ordinary and ovicelled zooecia, $\times 20$, ornamented by a porous area. The small areolae and median avicularium are visible.

Middle Jacksonian: One-half mile southeast of Georgia Kaolin Co.'s mine, Twiggs County, Georgia.

Cat. No. 64128, U.S.N.M.

14. Ordinary zooecia, $\times 20$, separated by a salient thread.

Upper Jacksonian (Ocala limestone): One and one-half miles above Bainbridge, Georgia.

Cat. No. 64129, U.S.N.M.

FIGS. 15, 16. *Smittina sordida*, new species (p. 465).

15. The incrusting zoarium, $\times 20$, with both ovicelled and ordinary zooecia. Both the small triangular oral avicularium and the round salient frontal avicularium are developed. The lyrula is visible frequently.

16. Another portion of the same zoarium, $\times 20$.

Upper Jacksonian (Ocala limestone): One and one-half miles above Bainbridge, Georgia.

Cat. No. 64130, U.S.N.M.

FIGS. 17-19. *Smittina crigua*, new species (p. 463).

17. Surface of the free bilamellar zoarium, $\times 20$. Two closed zooecia are present.

Upper Jacksonian (Ocala limestone): One and one-half miles southeast of Georgia Kaolin Co.'s mine, Twiggs County, Georgia.

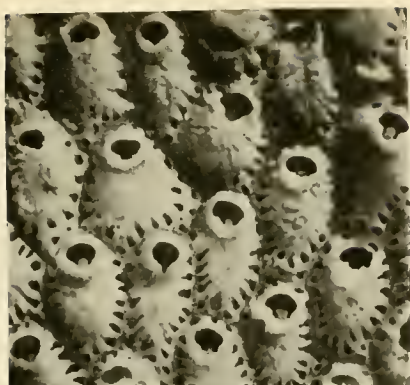
Cat. No. 64131, U.S.N.M.

18. Another zoarium with the pleurocyst well developed, $\times 20$. A number of the zooecia are closed.

19. View of the interior, $\times 20$.

Middle Jacksonian: Three and one-half miles west of Grovania, Georgia.

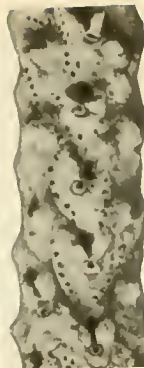
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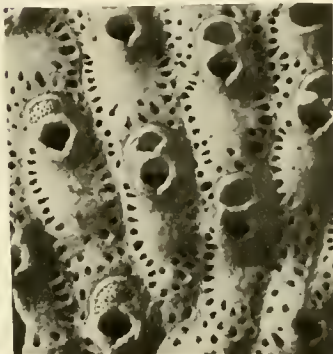
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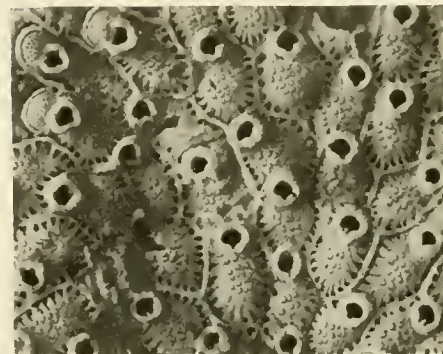
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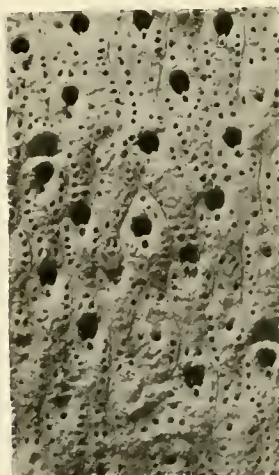
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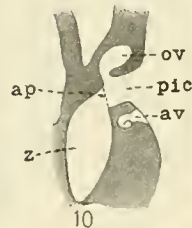
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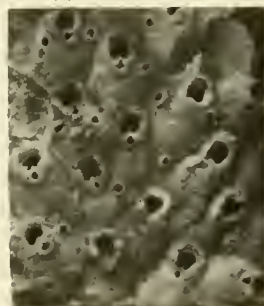
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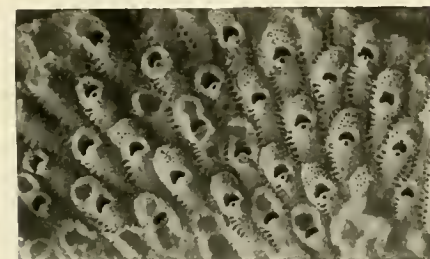
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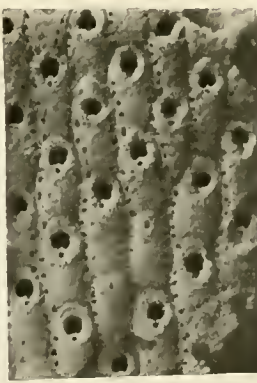
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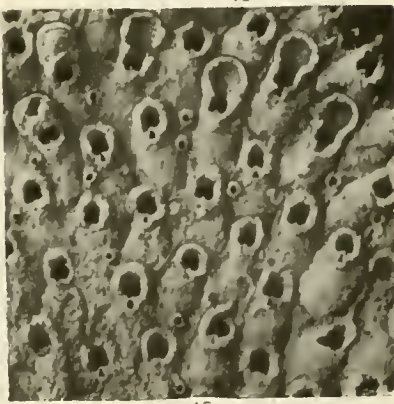
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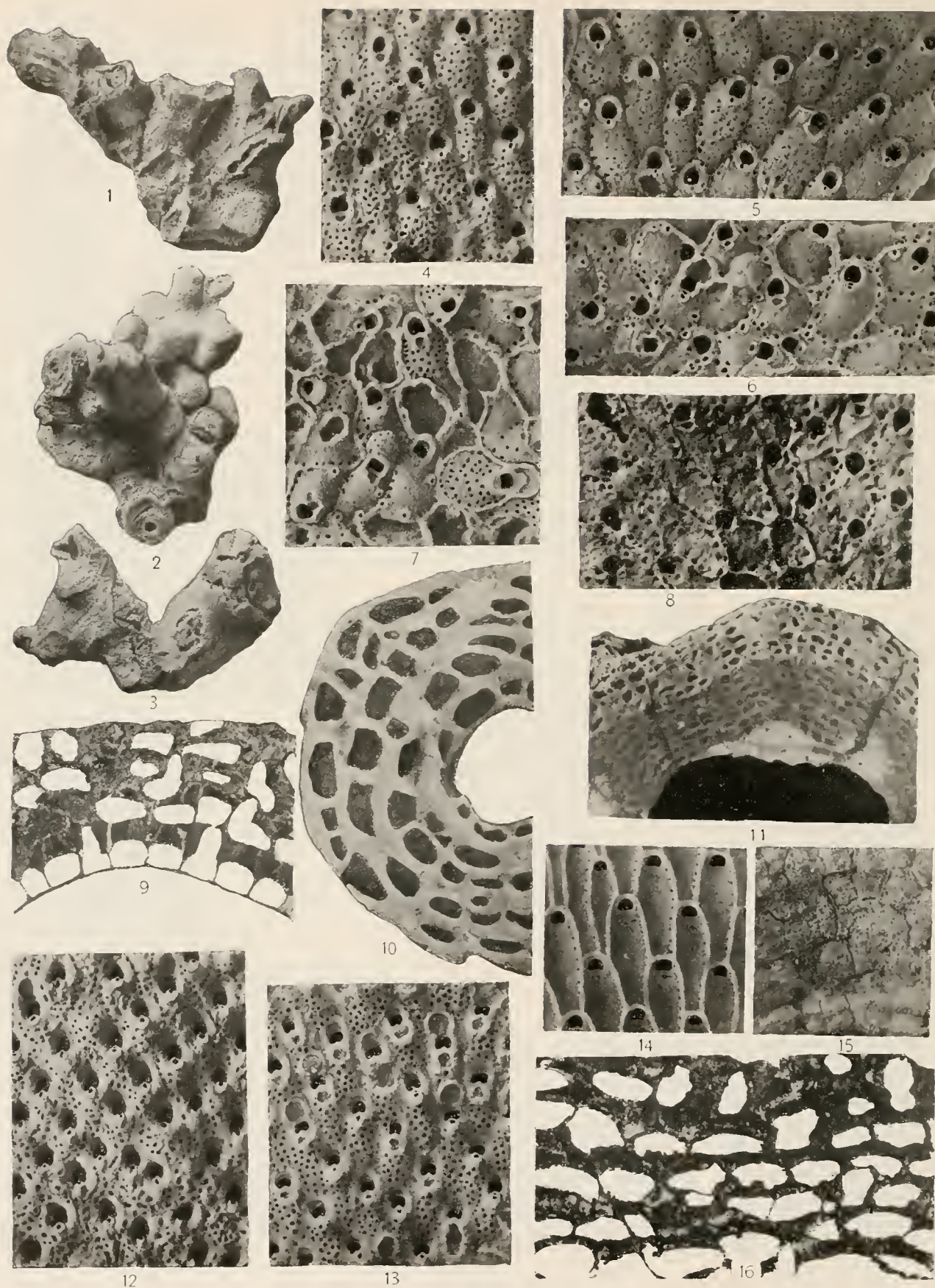
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17



15



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 60.

Figs. 1-16. *Smittina angulata* Reuss, 1865 (p. 461).

- 1-3. Three examples of the massive, hollow, irregularly lobed multilamellar zoaria, natural size.
 4. Ordinary zooecia, $\times 20$, with median and lateral avicularia, and a strongly developed porous pleurocyst. This is the most frequent aspect of the species.
 5. Surface of another zoarium, $\times 20$. The areolae are more visible and the pleurocyst is irregularly developed.
 6. Zooecia, $\times 20$, showing the pleurocyst developed above the olocyst, and in a few cases detached from it.
 7. Zoarial surface, $\times 20$, with two ovicelled zooecia. Like the zooecial frontal, the ovicell is covered by a porous pleurocyst.
 8. More calcified zooecia, $\times 20$, with a separating salient thread. Several closed zooecia are present.
 9. Transverse thin section, $\times 20$. The thick zooecial walls are perforated by tubules.
 10. Transverse section, $\times 20$, showing thickening of walls.
 11. Vertical section, $\times 6$. The dark lamellae are filled with calcite, thus forming a rigid substratum.
 - 12, 13. Strongly calcified zooecia, $\times 20$. The outlines of the zooecia are lost, but the porous pleurocyst is well developed.
 14. Interior of zooecia, $\times 20$, showing the smooth olocyst perforated laterally by small pores.
 15. Basal aspect of the zooecia, $\times 20$.
 16. Vertical thin section, $\times 20$, illustrating the minute structure.
- Jacksonian (Zengledon zone): Cocoa post office, Choctaw County, Alabama.
Cat. No. 64133, U.S.N.M.

PLATE 61.

FIGS. 1-4. *Smittina orbicularia*, new species (p. 469).

1. Surface of the unilamellar zoarium, $\times 20$, exhibiting ordinary zooecia with their orbicular avicularia. The pivot of the avicularia is quite visible.
2. View of the interior, $\times 20$, where the lyrula is visible.
3. Ovicelled zooecia, $\times 20$.
4. Another specimen, $\times 20$. A single ovicelled zooecium (broken) is present. The avicularium shows two or more perforations.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64134, U.S.N.M.

FIGS. 5-8. *Smittina puncturata*, new species (p. 464).

5. The incrusting zoarium, $\times 20$, exhibiting the ancestrula and surrounding zooecia.
6. Interior of zooecia, $\times 20$.
7. Large zooecia, $\times 20$, with well preserved median avicularia. The pleurocyst is finely porous.
8. A zoarium, $\times 6$, the original of figure 5.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64135, U.S.N.M.

FIGS. 9-13. *Plagiosmittia regularis* Canu and Bassler, 1917 (p. 472).

9. Four fragments of the flat bilamellar zoarium, natural size.
10. Ovicelled zooecia $\times 20$.
11. Ordinary zooecia, $\times 20$, separated by a thread. The transverse arrangement of the zooecia, the tremocyst and the lateral position of the avicularium are clearly indicated.
12. Ordinary and ovicelled zooecia, $\times 20$, separated by a furrow and showing a salient peristome and the avicularium quite clearly.
13. Tangential thin section through the frontal, $\times 20$, illustrating structure of the tremocyst.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

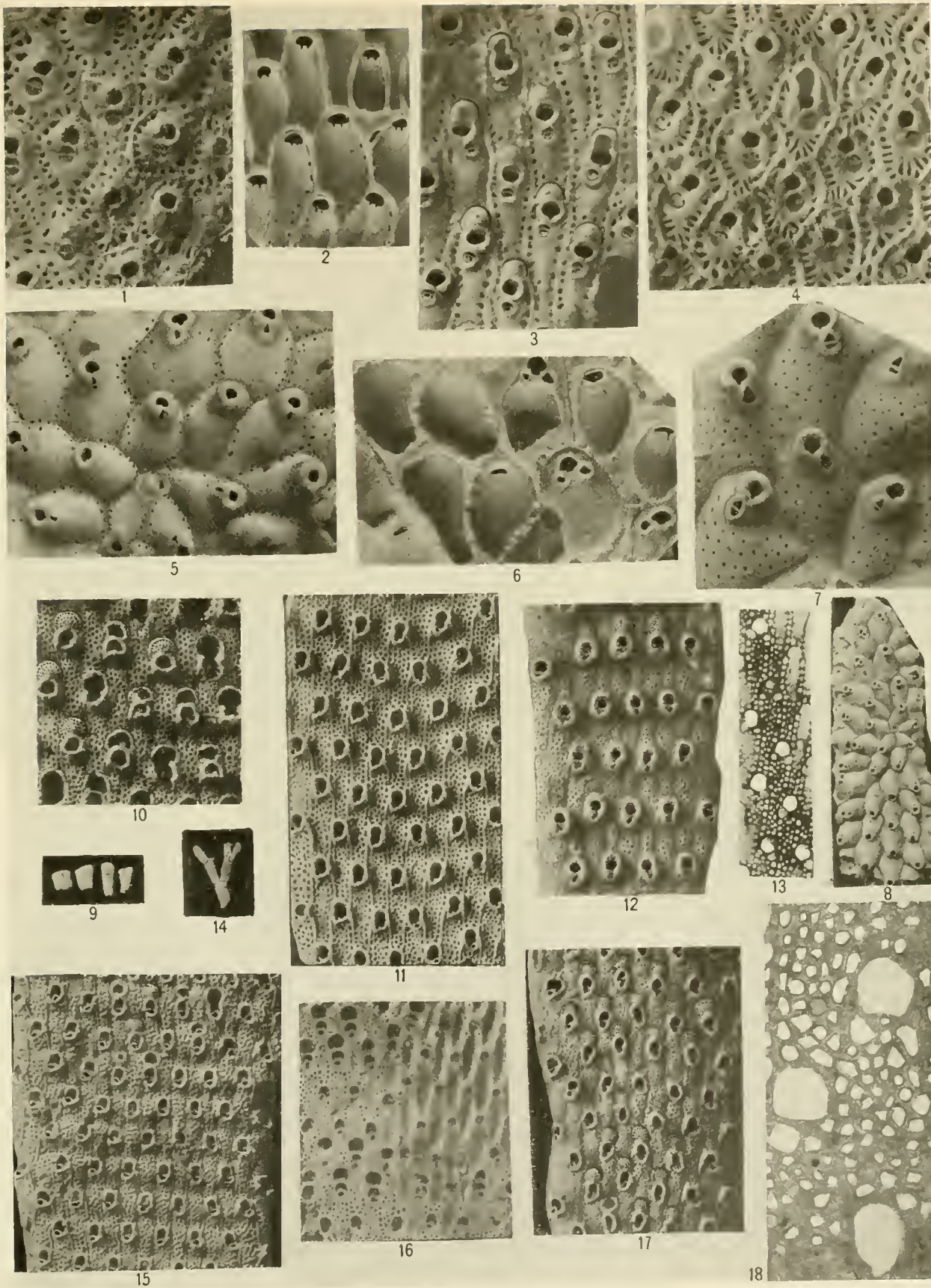
Cat. No. 62600, U.S.N.M.

FIGS. 14-18. *Plagiosmittia porelloides*, new species (p. 472).

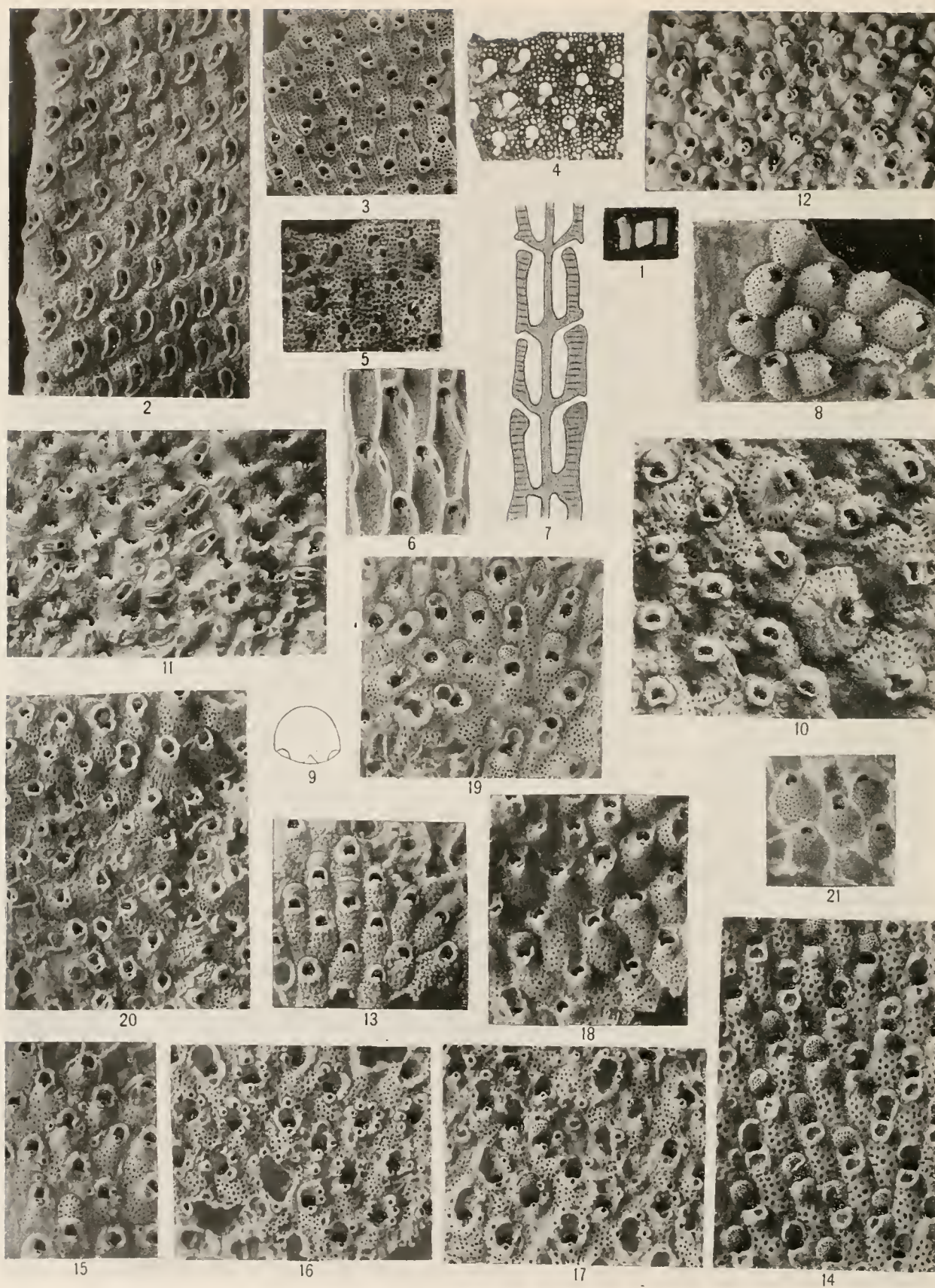
14. A nearly complete example of the narrow bilamellar zoarium, natural size (restoration).
15. Surface of a branch, $\times 20$, showing the small micrometric dimensions and the median position of the avicularium.
16. Interior of zooecia, $\times 20$. The ovicell, shape of the apertura, and the avicularium are shown.
17. Ovicelled zooecia, $\times 20$. As in other species of *Plagiosmittia*, the ovicell is formed of a porous area surrounded by a narrow, smooth collar.
18. Tangential thin section, through several zooecia, $\times 100$. The tremocystal nature of the frontal is evident.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64136, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

Figs. 1-7. *Plagiosmillia virgula*, new species (p. 473).

1. Three examples of the free bilamellar zoarium, natural size.
2. Portion of a branch, $\times 20$, with both ovicelled and ordinary zooecia. The median avicularium is transformed into a large ungniculate one.
3. A fragment, $\times 20$, with the zooecia separated by a salient thread.
4. Tangential thin section, $\times 25$. The median avicularium is sometimes replaced by two peristomial avicularia.
5. Interior of zooecia, $\times 20$. The median avicularium is replaced in part by two peristomial ones and sometimes by the large comma-shaped form.
6. View of the interior, $\times 30$, illustrating the two condyles back of the aperture.
7. Drawing of a vertical section, $\times 20$.

Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.

Cat. No. 64137, U.S.N.M.

Figs. 8, 9. *Mucronella granulosa*, new species (p. 475).

8. Surface of the incrusting zoarium, $\times 20$, showing zooecia with granular pleurocyst and obliquely directed mucro.
9. Sketch of the aperture showing the lyrula and the two small cardelles.

Lower Jacksonian (Moody's marl); Jackson, Mississippi.

Cat. No. 64138, U.S.N.M.

Fig. 10. *Mucronella patens*, new species (p. 475).

The incrusting zoarium, $\times 20$. The zooecia are unusually wide and have an erect mucro and a small lyrula.

Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.

Cat. No. 64139, U.S.N.M.

Fig. 11. *Rhynchostomella brendolensis*, var. *americana*, new variety (p. 477).

The incrusting zoarium, $\times 20$, showing the indistinct zooecia and the large and small avicularia.

Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.

Cat. No. 64140, U.S.N.M.

Fig. 12. *Rhynchostomella convexa*, new species (p. 478).

Surface of the incrusting zoarium, $\times 20$. The convex finely granulated frontal, the asymmetrical sinus of peristomie and oral avicularium are characteristic features.

Middle Jacksonian; Rich Hill, Crawford County, Georgia.

Cat. No. 64141, U.S.N.M.

Fig. 13. *Porcella granulosa*, new species (p. 484).

The incrusting type-specimen, $\times 20$. The frontal is granulose with transversal pores between the granules.

Lower Jacksonian (Moody's marl); Jackson, Mississippi.

Cat. No. 64142, U.S.N.M.

Fig. 14. *Porcella pungenis*, new species (p. 487).

Ovicelled zooecia of the incrusting zoarium, $\times 20$. Four rows of large pores form the tremocyst. The median avicularium is enormous and very salient. The umbo on which it is borne is frequently broken.

Lower Jacksonian (Moody's marl); Jackson, Mississippi.

Cat. No. 64143, U.S.N.M.

Figs. 15-17. *Porcella coronata*, new species (p. 485).

15. The incrusting zoarium, $\times 20$, representing young zooecia separated by a prominent thread.

16. A more mature zoarium, $\times 20$, exhibiting peristomial avicularia around aperture.

17. Another portion of the same zoarium, $\times 20$, with ovicelled zooecia, the ovicells usually being broken.

Lower Jacksonian (Moody's marl); Jackson, Mississippi.

Cat. No. 64144, U.S.N.M.

Figs. 18-21. *Porcella irregularis*, new species (p. 484).

18. Zooecia of the incrusting zoarium, $\times 20$, some of them showing traces of incompletely developed ovicells.

19. Ovicelled zooecia of a mature zoarium, $\times 20$.

20. Another mature zoarium, $\times 20$, illustrating irregularity in size and arrangement of zooecia.

21. Interior of zooecia, $\times 20$. A small lyrula is visible.

Lower Jacksonian (Moody's marl); Jackson, Mississippi.

Cat. No. 64145, U.S.N.M.

PLATE 62.

FIGS. 1-5. *Porella denticulifera*, new species (p. 485).

1. Two examples of the bilamellar zoarium, natural size.
2. Surface of zoarium, $\times 20$. The median avicularium, when well preserved, appears as a denticulated tube.
3. Ovicelled zooecia, $\times 20$. The small pores of the ovicell are in marked contrast to the very large tremopores.
4. Interior of zooecia, $\times 20$.
5. Tangential thin section, $\times 100$. The large tremopores, the ovicell and apertura are shown in white, while the avicularium is in grey.

Lower Jacksonian (Moodys marl) : Jackson, Mississippi.

Cat. No. 64146, U.S.N.M.

FIGS. 6-17. *Porella jacksonica*, new species (p. 486).

6. Small fragments of the bilamellar zoarium, natural size.
7. Ordinary zooecia, $\times 20$, showing the convexity of the frontal and the large mucro. This is the usual aspect.
8. Zooecia along margin of a zoarium, $\times 20$. The mucro is much elongated.
9. Ovicelled zooecia, $\times 20$.
10. Zooecia, $\times 20$. Adventitious avicularia are developed. The zooecia are not distinctly marked.
11. Another aspect of the species, $\times 20$. The dimensions are smaller than usual.
12. Portion of a zoarium, showing a frequent aspect of the species. The mucro is quite salient.
13. Zooecia, $\times 20$, with both the ovicells and avicularia broken, a frequent occurrence.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.

Cat. No. 64148, U.S.N.M.

14. Surface of an old zoarium, $\times 20$, altered by calcification.
15. View of the interior, $\times 20$, showing the white circles surrounding the pores of the olocyst. The zooecia are indistinct.

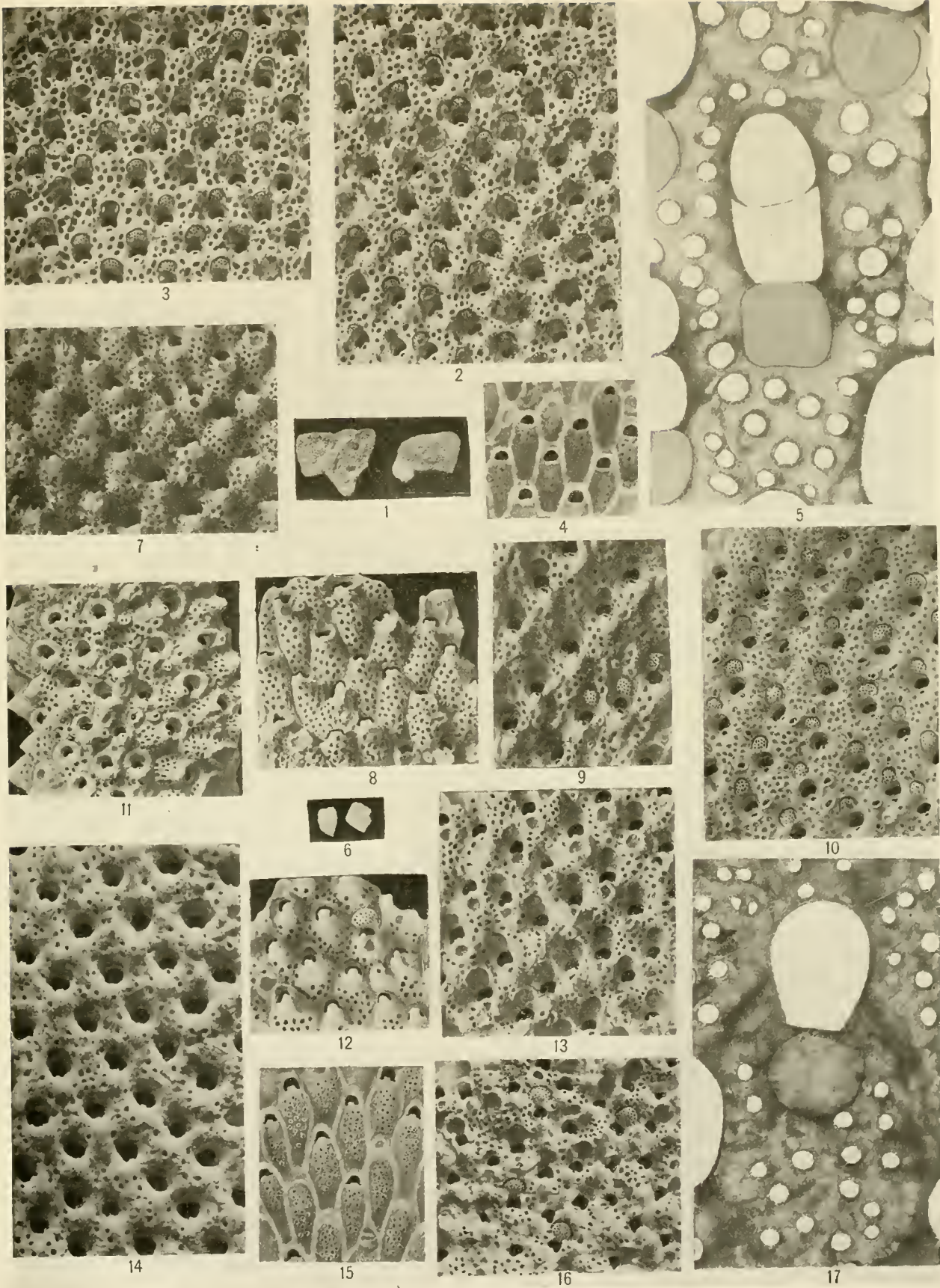
Lower Jacksonian (Moodys marl) : Jackson, Mississippi.

Cat. No. 64149, U.S.N.M.

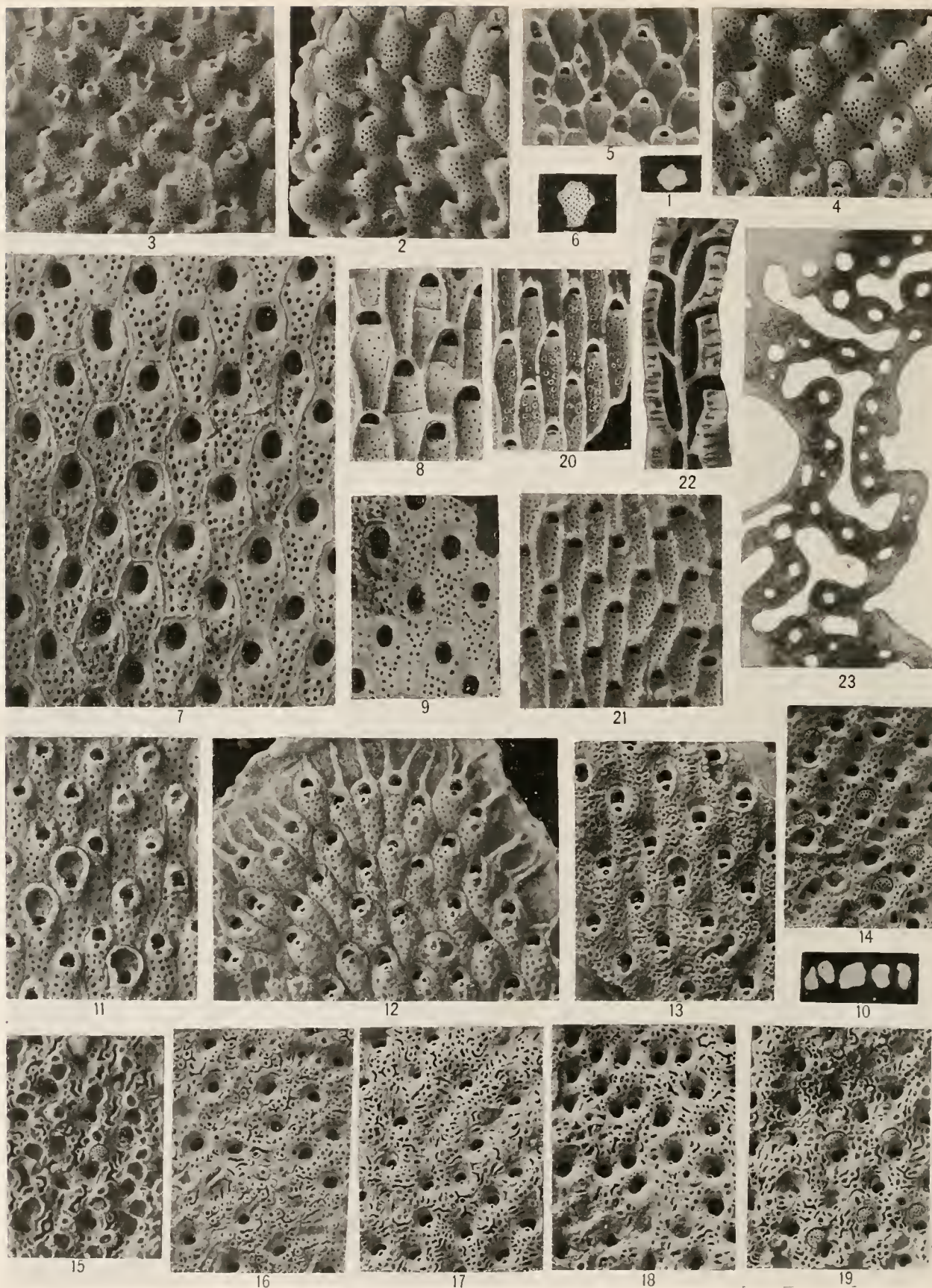
16. A zoarium, $\times 20$, with stunted, indistinct zooecia.
17. Tangential thin section of a zooecium, $\times 100$. The apertura, avicularia and tremopores are shown.

Middle Jacksonian : Baldock, Barnwell County, South Carolina.

Cat. No. 64150, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 64.

FIGS. 1-5. *Porcella unguiculata*, new species (p. 488).

1. Fragment of the unilamellar creeping zoarium, natural size.
2. Ordinary and ovicelled zooecia, $\times 20$, with the large umbo well preserved.
3. Another zoarium, $\times 20$. The umbo is broken and represented by a cicatrix.
4. Another aspect of the zoarial surface, $\times 20$.
5. Interior of zooecia, $\times 20$, showing the thick olocyst.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64151, U.S.N.M.

FIGS. 6-9. *Porcella planulata*, new species (p. 488).

6. The bilamellar type-specimen, natural size.
7. Surface of the same, $\times 20$. Only ordinary zooecia and an avicularian zooecium (in the upper corner) are shown.
8. Interior of zooecia, $\times 20$. Certain zooecia are divided into two parts.
9. An abraded zoarial surface, $\times 20$. The avicularium is seen buried in the tremocyst of one zooecium. An avicularian zooecium is present.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64152, U.S.N.M.

FIGS. 10-23. *Porcella portentosa*, new species (p. 489).

10. Fragments of the bilamellar zoarium, natural size.
11. Aspect of the zooecial surface, $\times 20$, when the tubules are adjacent.
12. Marginal zooecia, $\times 20$, showing incomplete calcification.
13. A frequent aspect of the species, $\times 20$.
- 14, 15. Two views of ovicelled zooecia, $\times 20$. The frontal of the ovicell has minute pores.
16. Ordinary zooecia, $\times 20$, with well developed tubules.
17. Surface, $\times 20$, showing several calcified zooecia.
18. A strongly calcified surface, $\times 20$. The intertubular spaces are coalesced.
19. Ordinary and ovicelled zooecia, $\times 20$. The tubules give a bizarre aspect to the surface.
20. Interior of zooecia, $\times 20$, showing the pores of the olocyst surrounded by a white circle.
21. Interior, $\times 20$, showing the tremopores.
22. Vertical section, $\times 20$.
23. Tangential thin section, $\times 100$, illustrating structure of the tubules.

Middle Jacksonian: Baldock, Barnwell County, South Carolina.

Cat. No. 64153, U.S.N.M.

PLATE 65.

FIGS. 1-3. *Porcella abdita*, new species (p. 489).

1. Two fragments of the bilamellar zoarium, natural size.

2. The usual aspect of the surface. $\times 20$.

Upper Jacksonian (Ocala limestone): Alachua, Florida.

Cat. No. 64154, U.S.N.M.

3. View of a more calcified zoarium. $\times 20$. A closed zooecium is seen in the center of the figure.

Upper Jacksonian (Ocala limestone): Nine miles north of Ocala, Florida.

Cat. No. 64155, U.S.N.M.

FIGS. 4-8. *Phocena simulator*, new species (p. 496).

4. A group of the free, cylindrical unbranched zoaria, natural size.

5. Zoarium. $\times 20$. The peristome occasionally bears a small avicularium.

6. Another example. $\times 20$, with the pseudolyrula visible.

7. The usual aspect of the species. $\times 20$.

8. Longitudinal section of a zooecium. $\times 20$.

ap, apertura; *av*, peristomial avicularium; *ol*, olocyst; *pc*, peristome; *pi*, peristomie;
pic, peristomie; *z*, zooecium.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64156, U.S.N.M.

FIGS. 9-14. *Retepora scutulata*, new species (p. 504).

9. Fragments of the free, reticulated zoarium, natural size.

10. Finely granulated dorsal side. $\times 20$.

11. A branch with ovicelled zooecia. $\times 20$.

12. The usual aspect of the species. $\times 20$, showing the indistinct zooecia.

13. Ordinary and ovicelled zooecia. $\times 20$. A small avicularium is present on the anterior lip of the peristomie. The ovicell bears a round cleft.

14. Smooth dorsal side. $\times 20$. Vibices are very rare.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Florida.

Cat. No. 64157, U.S.N.M.

FIGS. 15-25. *Retepora ramosa*, new species (p. 501).

15. Fragment of the free dichotomously branched zoarium, natural size.

16. Usual aspect of the celluliferous side. $\times 20$.

17. View of another specimen. $\times 20$, in which the tuberosities are less developed.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64158, U.S.N.M.

18. A fragment. $\times 20$, with strongly developed tuberosities.

19. Ovicelled zooecia. $\times 20$, with fissure of ovicells shown frequently.

20. Dorsal. $\times 20$, with vibices replaced by furrows.

Middle Jacksonian: Near Leno's Ferry, South Carolina.

Cat. No. 64159, U.S.N.M.

21. An example. $\times 20$, with the spiramen well exhibited.

22. Dorsal. $\times 20$, preserving vibices with pores between them.

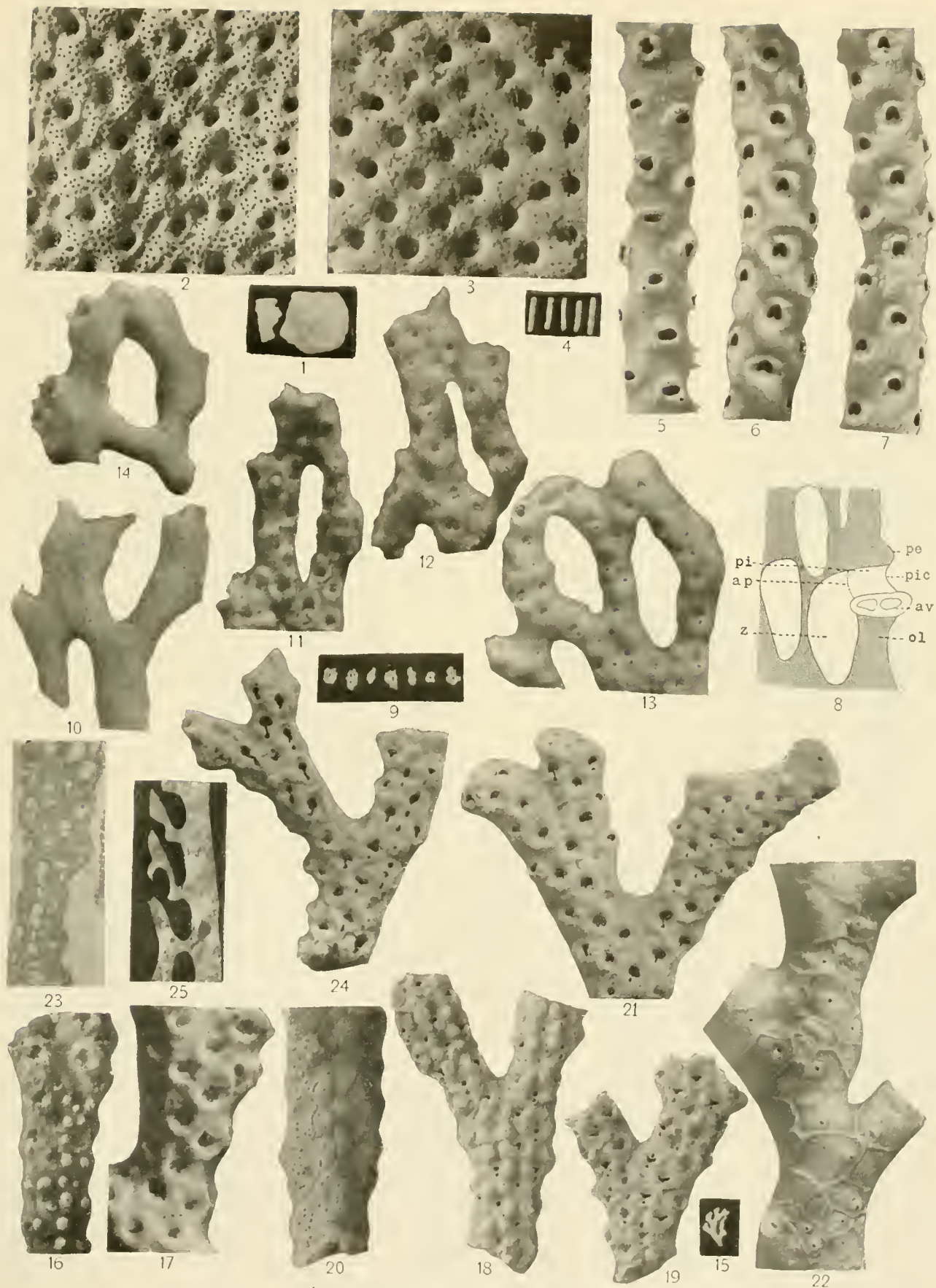
23. Tangential thin section. $\times 20$. The relations of the ovicell, apertura and spiramen are shown.

24. A branch. $\times 20$, bearing zooecia with a very large spiramen.

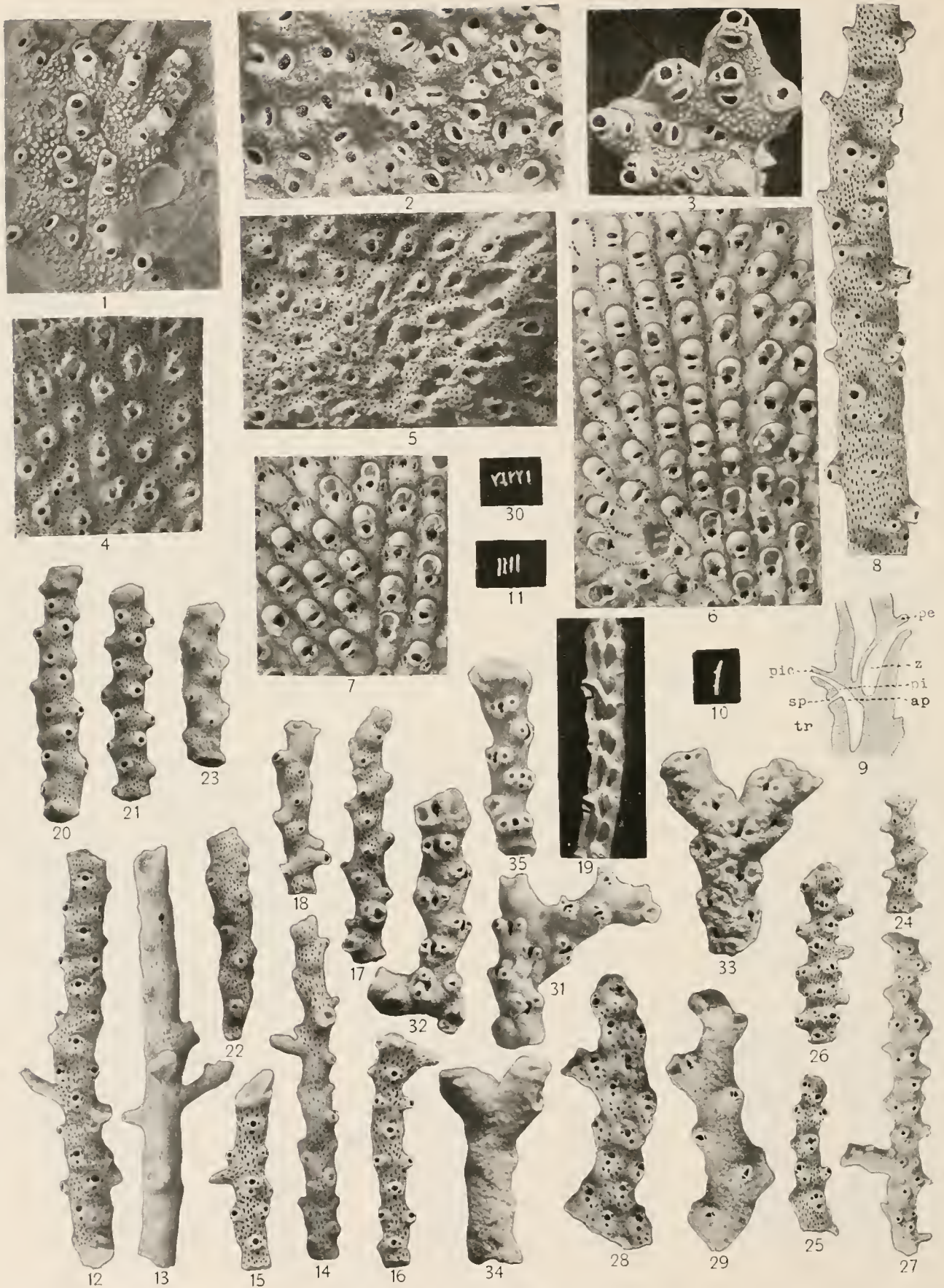
25. Sketch of a longitudinal section. $\times 20$, through a zooecium with ovicell.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64158, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

- FIG. 1. *Galcopsis longicollis*, new species (p. 512).
The incrusting type-specimen, $\times 20$. The long peristomie is characteristic.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64160, U.S.N.M.
- FIG. 2. *Galcopsis erinaceus*, new species (p. 514).
The incrusting zoarium, $\times 20$, showing the elongated narrow spiramen and the spines of the surface.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64161, U.S.N.M.
- FIG. 3. *Galcopsis verrucosa*, new species (p. 515).
The unilamellar zoarium, $\times 20$. The immense spiramen, the triangular avicularium and the wart-like projections of the frontal are to be noted.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64162, U.S.N.M.
- FIGS. 4, 5. *Galcopsis cyclops*, new species (p. 514).
4. The incrusting zoarium, $\times 20$, showing mature zooecia with spiramen and avicularia. A few young zooecia without spiramen are present.
5. Ancestrula and surrounding zooecia, $\times 20$. The ancestrula is an ordinary zooecium.
Upper Jacksonian (Ocala limestone): Alachua, Florida.
Cat. No. 64163, U.S.N.M.
- FIGS. 6, 7. *Schizoropsis convexa* Canu and Bassler, 1917 (p. 515).
6. The incrusting zoarium, $\times 20$, with ovicelled zooecia. Some of the zooecia exhibit the spiramen but many of them show the rectilinear rimule.
7. Fragment of another zoarium, $\times 20$.
Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 62603, U.S.N.M.
- FIGS. 8-10. *Hasirellia gracilis*, new species (p. 517).
8. The free cylindrical zoarium, $\times 20$. The round pore just below the peristome is the spiramen. The other large pores are avicularia.
9. Longitudinal section, $\times 20$.
ap, aperture; *pc*, peristome; *pi*, peristomie; *pie*, peristomice; *sp*, spiramen; *tr*, tremocyst; *z*, zooecium.
10. The type-specimen, natural size.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 64164, U.S.N.M.
- FIGS. 11-23. *Semihasurellia exilis*, new species (p. 518).
11. Four fragments of the thin, free, cylindrical zoarium, natural size.
12. Celluliferous side of a zoarium, $\times 20$, showing the peristomie with two small lateral avicularia and a small spiramen.
13. Dorsal side of the same specimen, $\times 20$. An avicularium is developed and the lateral appendages are well shown.
14. Dorsal of a zoarium, $\times 20$, in which the tremocystal sulci are barely visible.
15, 16. Frontal side of two fragments, $\times 20$. The sulci are quite distinct.
17, 18. Dorsal side of two fragments, $\times 20$, showing the small round avicularia.
19. Vertical section through a branch, $\times 20$. The zooecia are seen opening on one side. Two zooecia show the spiramen.
Vicksburgian (Glendon division of Marianna limestone): West bank, Conecuh River, Escambia County, Alabama.
Cat. No. 64165, U.S.N.M.
- 20, 21. Celluliferous side of two fragments from the Jacksonian, $\times 20$, forming a variety with closely arranged verticells.
22, 23. Two fragments, $\times 20$, exhibiting the dorsal with avicularia.
Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Florida.
Cat. No. 64166, U.S.N.M.
- FIGS. 24-27. *Semihasurellia tripura*, new species (p. 518).
24. Dorsal side of the free unbranched zoarium, $\times 20$. Three rows of small avicularia are present.
25, 26. Two fragments, $\times 20$, showing the features of the celluliferous side.
27. Dorsal side of a large fragment, $\times 20$, bearing a lateral apophysis. The usual small avicularia are present.
Middle Jacksonian: Near Lennds Ferry, South Carolina.
Cat. No. 64167, U.S.N.M.
- FIGS. 28-29. *Semihasurellia ? clava*, new species (p. 519).
28. Celluliferous face of the free, compressed zoarium, $\times 20$. There are three rows of zooecia. The tremopores are scattered.
29. Dorsal side of another fragment, $\times 20$. The surface is granular, and two rows of salient avicularia with pivot are present.
Middle Jacksonian: Near Lennds Ferry, South Carolina.
Cat. No. 64168, U.S.N.M.
- FIGS. 30-35. *Gigantopora filiformis*, new species (p. 520).
30. A group of the free, thread-like, branched zoaria, natural size.
31, 32. Celluliferous side of two fragments, $\times 20$, showing the smooth frontal, the lateral avicularia and the usual aspect of the peristomie.
33. A bifurcated fragment, $\times 20$. The rimule of the aperture is visible.
34. Dorsal of zoarium, $\times 20$. It is usually smooth, rarely porous.
35. A branch, $\times 20$, showing several zooecia provided with the spiramen.
Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Florida.
Cat. No. 64169, U.S.N.M.

PLATE 67.

FIG. 1. *Tessaradoma ornata*, new species (p. 521).

Celluliferous side of the free, compressed zoarium, $\times 20$. The frontal is smooth and has areolae. The peristome bears two small avicularia, and the frontal also has a few simple avicularia in addition to the spiramen.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64170, U.S.N.M.

FIGS. 2, 3. *Tessaradoma grandipora*, new species (p. 522).

2. The free, compressed branching zoarium, $\times 20$. The wide peristome and the spiramen opening, close to the peristome, are shown.

3. Dorsal side of another example, $\times 20$. The dorsal is a tremocyst and bears a median row of avicularia.

Upper Jacksonian (Ocala limestone): West bank Sepulga River, Escambia County, Alabama.

Cat. No. 64171, U.S.N.M.

FIGS. 4-23. *Tremotoichas rectifurcatum* Canu and Bassler, 1917 (p. 523).

4. Three fragments of the free, subcylindrical zoarium, natural size.

5. A young specimen, $\times 20$, showing the thin peristome with avicularium, the tremocystal frontal and the spiramen to the right or left of the median axis.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 62606, U.S.N.M.

6, 7. Celluliferous side of two fragments, $\times 20$. The spiramen is not always visible and the peristome often bears two avicularia.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Florida.

Cat. No. 64172, U.S.N.M.

8. A young example, $\times 20$, in which the spiramen is not plainly visible.

9. Two fragments, natural size, of much branched zoaria.

10. Dorsal of an old example, $\times 20$. The branches are close together.

11. Celluliferous side of another old example, $\times 20$. The spiramen is lost among the sulci, and the peristome is often obscured.

12. Portion of a mature specimen, $\times 20$, showing another aspect of the species. The spiramen is not apparent.

13, 14, 15. Transversal sections, $\times 20$, exhibiting thickness of the outer walls.

16. Schematic drawing of a vertical section.

ap, aperture; *pc*, peristome; *pi*, peristomie; *pic*, peristomice; *sp*, spiramen; *tb*, tubule; *tr*, tremocyst; *z*, zooecium.

17. Vertical thin section, $\times 20$, showing that the tubules of the tremocyst are confused.

18. View of zoarium, after frontal has been abraded, $\times 20$. The line (*am*) is shown also in fig. 15.

19. Vertical section, $\times 20$. The zooecia communicate by septulae (*s*).

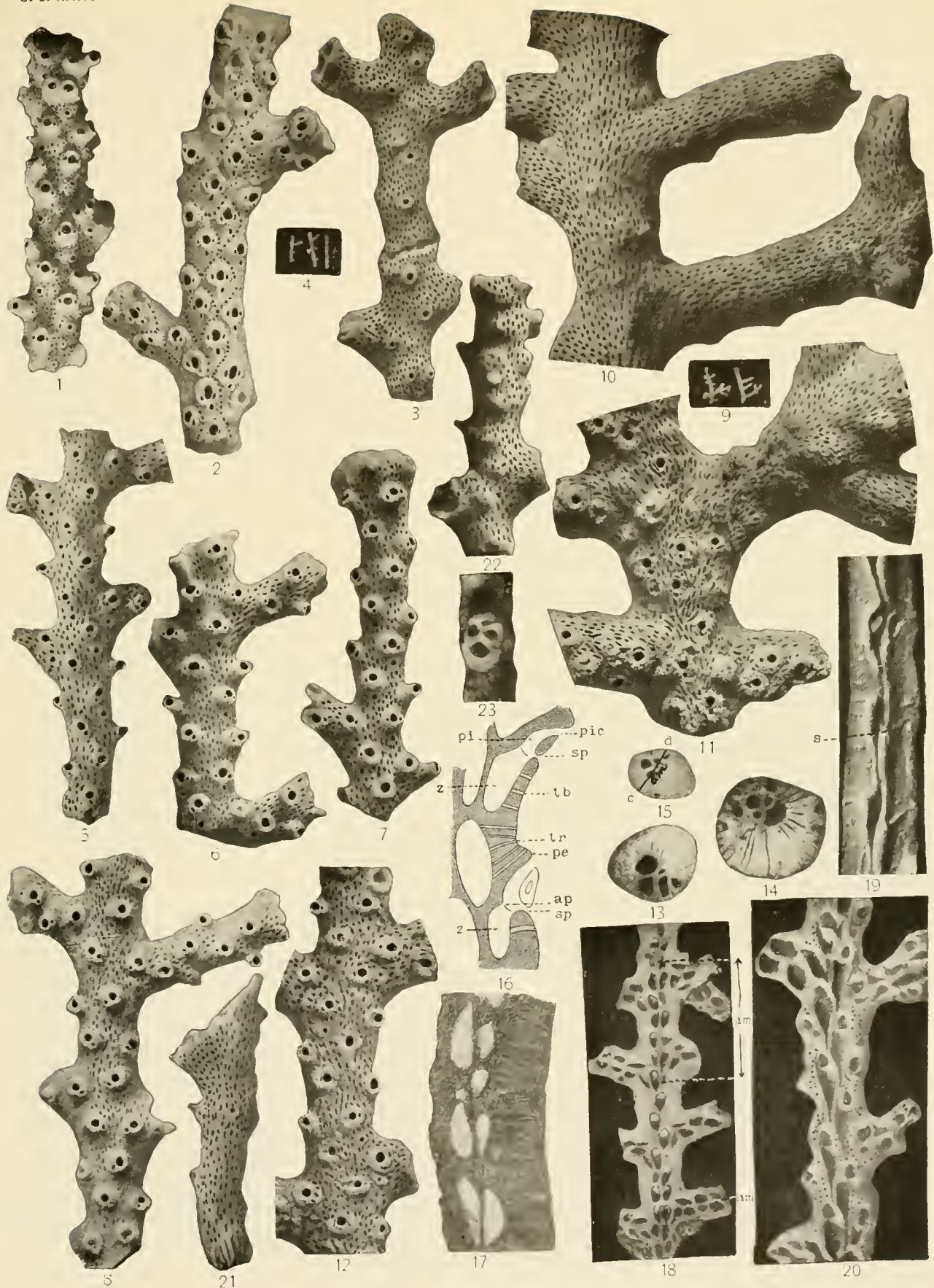
20. Interior of zooecia, $\times 20$. No pores on the zooecial front are apparent.

21, 22. Dorsal of young specimens, $\times 20$.

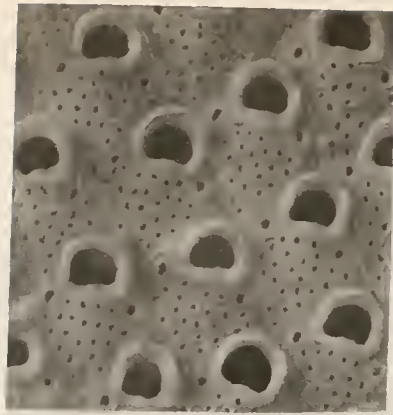
23. Lateral view, $\times 20$, showing transverse section of a side branch.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

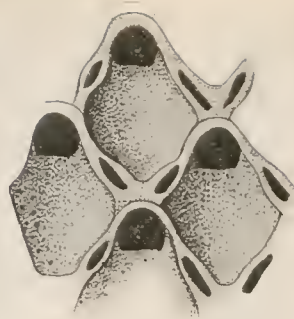
Cat. No. 62606, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



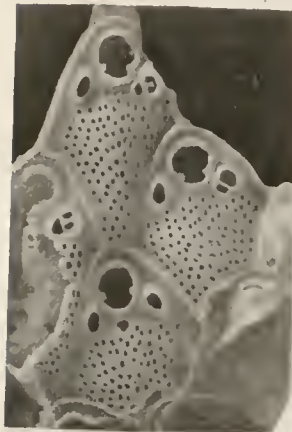
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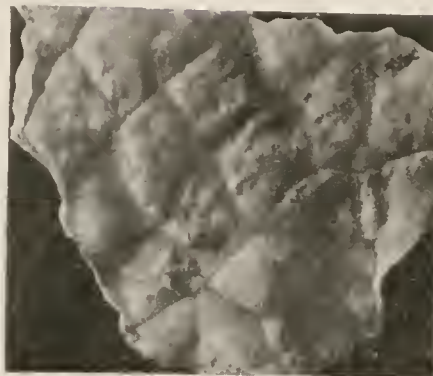
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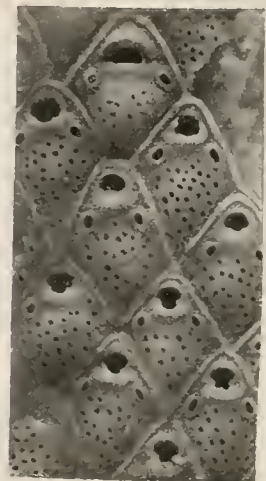
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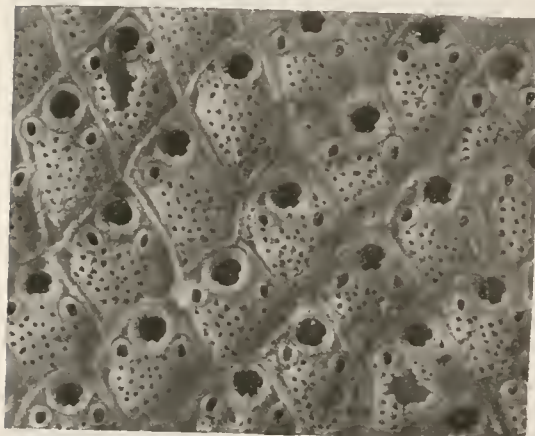
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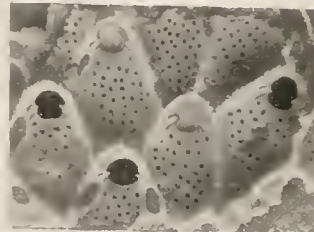
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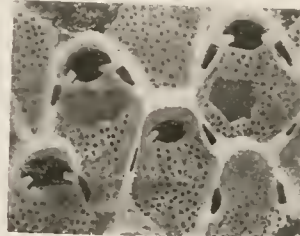
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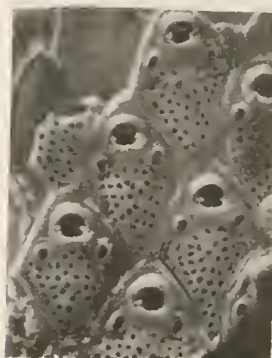
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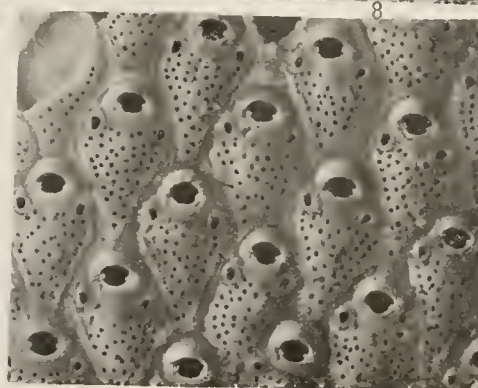
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JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 68.

FIGS. 1, 2. *Cheilopora preclucidioides*, new species (p. 527).

1. Surface of the bilamellar zoarium. $\times 20$. The zooecia are large and their frontal has tremopores placed at the base of hexagonal areas.
2. Interior of the zooecia. $\times 20$, exhibiting the large fusiform dietellae of the lateral walls.

Middle Jacksonian: Near Lenuds Ferry, South Carolina.

Cat. No. 64173, U.S.N.M.

FIGS. 3-5. *Cheilopora grandis*, new species (p. 528).

3. The unilamellar zoarium, $\times 20$. One apertura is closed by a calcareous lamina.
4. Several zooecia. $\times 20$, illustrating the form of the apertura quite clearly.
5. Basal side of zooecia, $\times 10$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64174, U.S.N.M.

FIGS. 6-8. *Cheilopora transversoides*, new species (p. 530).

6. Ordinary zooecia of the bilamellar zoarium. $\times 20$, exhibiting the transverse apertura with the two median cardelles.
7. Surface of another zoarium, $\times 20$.
8. Interior of zooecia, $\times 20$. The fusiform dietellae and the two condyles are shown.

Middle Jacksonian: Near Lenuds Ferry, South Carolina.

Cat. No. 64175, U.S.N.M.

FIGS. 9-11. *Cheilopora saillans*, new species (p. 528).

9. Ordinary zooecia of the bilamellar zoarium, $\times 20$. Both the avicularia and the separating line are quite prominent.
10. Another zoarium, $\times 20$. An ovicelled zooecium is seen at the top.
11. View of the interior of zooecia, $\times 20$. The condyles of the apertura and the dietellae-like openings are visible. Several apertures are closed by a calcareous lamina.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64176, U.S.N.M.

FIG. 12. *Cheilopora strictocella*, new species (p. 527).

- Surface of the plurilamellar zoarium, $\times 20$, showing the narrow zooecia separated by a salient thread. The three elongated openings belong to avicularian zooecia.

Middle Jacksonian: Near Lenuds Ferry, South Carolina.

Cat. No. 64177, U.S.N.M.

PLATE 69.

FIGS. 1-5. *Chcilopora specula*, new species (p. 531).

1. Ordinary zooecia of the incrusting zoarium, $\times 10$, with the tubular avicularia well developed.
2. Portion of fig. 5, $\times 20$, showing the extraordinary development of the peristome.
3. Zoarial surface, $\times 10$, showing several closed zooecia.
4. Portion of a zoarium, $\times 20$. Two of the zooecia are ovicelled.
5. Zoarium, $\times 10$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64178, U.S.N.M.

FIG. 6. *Chcilopora transversa*, new species (p. 529).

Surface of the bilamellar zoarium, $\times 20$. The transverse aperture is quite evident, while that of the ovicelled zooecia is distinctly larger.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64179, U.S.N.M.

FIGS. 7, 8. *Chcilopora sulcifera*, new species (p. 531).

7. Surface of the unilamellar creeping zoarium, $\times 20$, with the tremopores appearing like sulci.
8. Another zoarium, $\times 20$, with elongated zooecia.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64180, U.S.N.M.

FIGS. 9-14. *Hippopodina vibraculifera* Canu and Bassler, 1917 (p. 532).

- 9, 10. Two longitudinal fractures, $\times 20$, illustrating occurrence of the septulae.
11. Drawing, $\times 20$, of a longitudinal section.
ov, ovicell; s, septulae; v, vibraculum; z, zoecium.
12. Ordinary zooecia of the bilamellar zoarium, $\times 20$. Three of the zooecia show the tremocyst separated from the olocyst.
13. Interior of zooecia, $\times 20$.
14. Ordinary and ovicelled zooecia, $\times 20$. Four zooecia are closed by a finely perforated operculum.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 62604, U.S.N.M.

FIG. 15. *Watersipora ? erecta*, new species (p. 538).

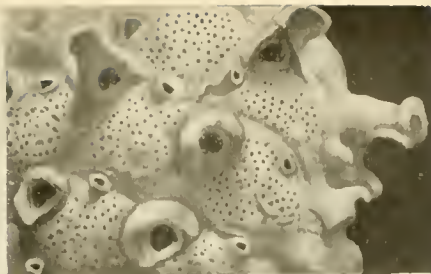
The free, erect bifoliate zoarium, $\times 20$.

Upper Jacksonian (Ocala limestone): Alachua, Florida.

Cat. No. 64181, U.S.N.M.



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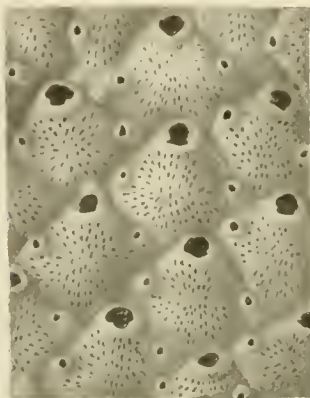
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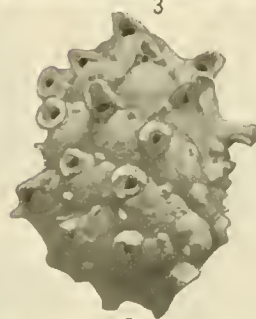
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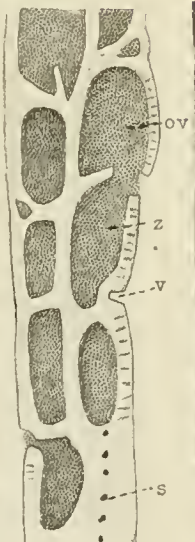
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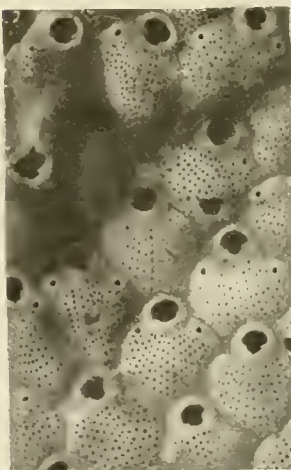
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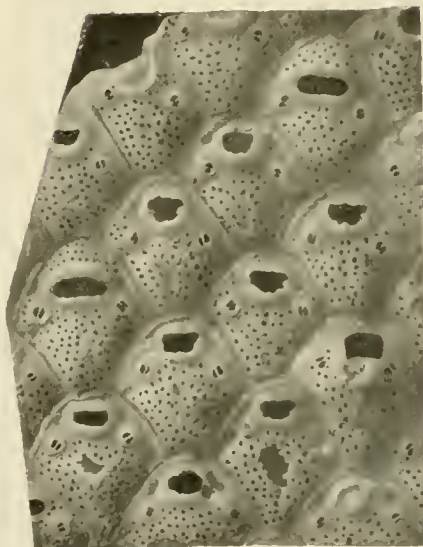
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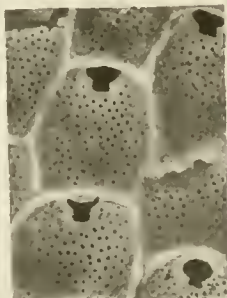
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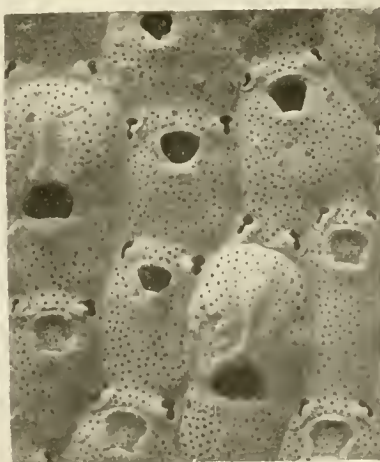
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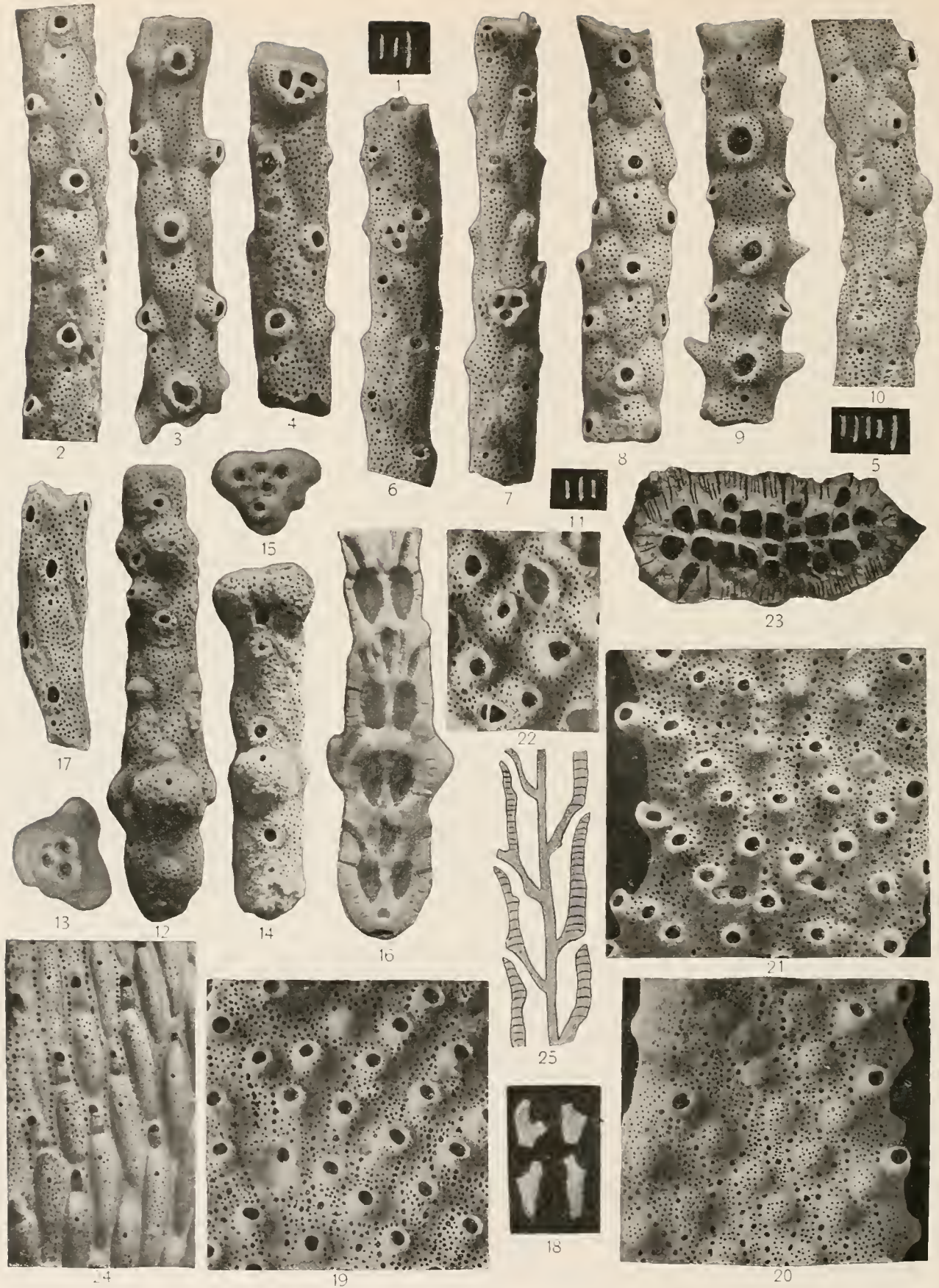
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JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 70.

FIGS. 1-4. *Tubocellaria parriparosa*, new species (p. 543).

1. Three segments, natural size.
2. Normal aspect of the zooecia, $\times 20$, with the closely arranged small frontal pores.
3. Another segment, $\times 20$. An ovicelled zooecium is present at the base.
4. A branch, $\times 20$, showing pores of articulation.

Middle Jacksonian: Baldock, Barnwell County, South Carolina.

Cat. No. 64182, U.S.N.M.

FIGS. 5-10. *Tubocellaria fallax*, new species (p. 543).

5. A group of segments, natural size.
6. An example, $\times 20$, exhibiting the pores for articulation.
7. A segment, $\times 20$, preserving several closed zooecia.

Middle Jacksonian: 18 miles west of Wrightsville, Georgia.

Cat. No. 64183, U.S.N.M.

8. Normal aspect of the zooecia, $\times 20$.

9. A fragment, $\times 20$, with three ovicelled zooecia.

Middle Jacksonian: Baldock, Barnwell County, South Carolina.

Cat. No. 64184, U.S.N.M.

10. An old segment, with closed zooecia, $\times 20$.

Middle Jacksonian: Three and one-quarter miles south of Perry, Georgia.

Cat. No. 64185, U.S.N.M.

FIGS. 11-17. *Tubocellaria nodifera*, new species (p. 546).

11. Three fragments, natural size.
12. A segment, $\times 20$, with the characteristic nodes.
13. View of lower end of the same specimen, $\times 20$.
14. Another nodose segment, $\times 20$. The lower node is distinctly seen to be formed about the ascopore.
15. Upper end view of this specimen, $\times 20$.
16. Longitudinal section, $\times 20$, illustrating structure of zooecia, ascopore and tubules.
17. An example, $\times 20$, with an ovicelled zooecium in the middle. The peristomes are broad.

Upper Jacksonian (Ocala limestone): Alachua, Florida.

Cat. No. 64186, U.S.N.M.

FIGS. 18-25. *Tubocella monilifera* Camm and Bassler, 1917 (p. 547).

18. Four fragments of the free bilamellar zoarium, natural size.
19. The usual aspect of the zooecia, $\times 20$.
20. A branch, $\times 20$, with most of the zooecial apertures closed by the tremocyst.
21. Zooecia, $\times 20$. Two avicularia are developed.
22. Surface of a branch, $\times 20$, with ovicelled zooecia. A well preserved avicularium is seen at the bottom of the figure.
23. Transverse section, $\times 20$.
24. View of interior, $\times 20$, showing ascopore opening far from the aperture. The visible orifice is the peristome. The small transverse bar is the inferior lip of the aperture.
25. Sketch of longitudinal section, $\times 20$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 62605, U.S.N.M.

PLATE 71.

FIGS. 1-9. *Tubocella gibbosa*, new species (p. 548).

1. The bilamellar, dichotomously branched zoarium, natural size.
- 2, 3. Two fragments, $\times 10$, illustrating the gibbosities of the surfaces formed by the development of the tubules about the peristomie.
4. A portion of figure 2, $\times 20$, showing structure in more detail. The ascopore is small and not easily distinguished from the frontal pores.
5. Isolated gibbosity of a branch, $\times 20$, with the peristomies much enlarged by the growth of the tubules.
- 6, 7. Two longitudinal sections, $\times 20$, exhibiting the internal structure. The tremocyst is very thick but sometimes thin.
8. Transverse section, $\times 20$, of a fragment with nodosities.
9. Longitudinal section, $\times 20$, showing that the nodosities of the surface are caused by the increased growth of the tubules.

Middle Jacksonian: Near Lenneds Ferry, South Carolina.

Cat. No. 64187, U.S.N.M.

FIGS. 10-12. *Braccbridgia aculeata*, new species (p. 558).

10. Fragments of the free bilamellar zoarium, natural size.
11. Zooecia, $\times 20$, with interareolar costules well developed.
12. Another surface, $\times 20$. The median position of the avicularium is evident.

Middle Jacksonian: $3\frac{1}{2}$ miles south of Perry, Georgia.

Cat. No. 64188, U.S.N.M.

FIGS. 13-23. *Braccbridgia polymorpha costulata*, new variety (p. 559).

13. Fragments of the bilamellar zoarium, natural size.
14. An example, $\times 20$, exhibiting gonooecia which are larger than the ordinary zooecia. The lamella is seen.
15. An aspect of the zooecia, $\times 20$.
16. Interior of zooecia, $\times 20$. The areolae are quite visible.
17. Another fragment, $\times 20$, exhibiting transverse avicularia.
18. Aspect of zooecia, $\times 20$, in which the characters are changed by fossilization.

Middle Jacksonian: One-half mile southeast of Georgia Kaolin Co.'s mine, Twiggs County, Georgia.

Cat. No. 64189, U.S.N.M.

19. Ordinary zooecia, $\times 20$, with prominent avicularia deforming the aperture.
20. Zooecia, $\times 20$, with transverse, curved avicularia.
21. Zooecia, $\times 20$, showing the very salient avicularia.
22. A fragment exhibiting gonooecia, $\times 20$. The avicularium is oblique and deforms the aperture.
23. Zooecia of a polymorphic fragment, $\times 20$, with large oblique avicularium.

Middle Jacksonian: 18 miles west of Wrightsville, Georgia.

Cat. No. 64190, U.S.N.M.

FIGS. 24-26. *Phylactella infundibulum* Cunn and Bassler, 1917 (p. 574).

24. Ordinary zooecia of the incrusting zoarium, $\times 20$. The small pores and granules of the surface and the tubular peristome with its distal tongue are illustrated.
- 25, 26. Two fragments, $\times 20$, each bearing an ovicelled zooecium.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

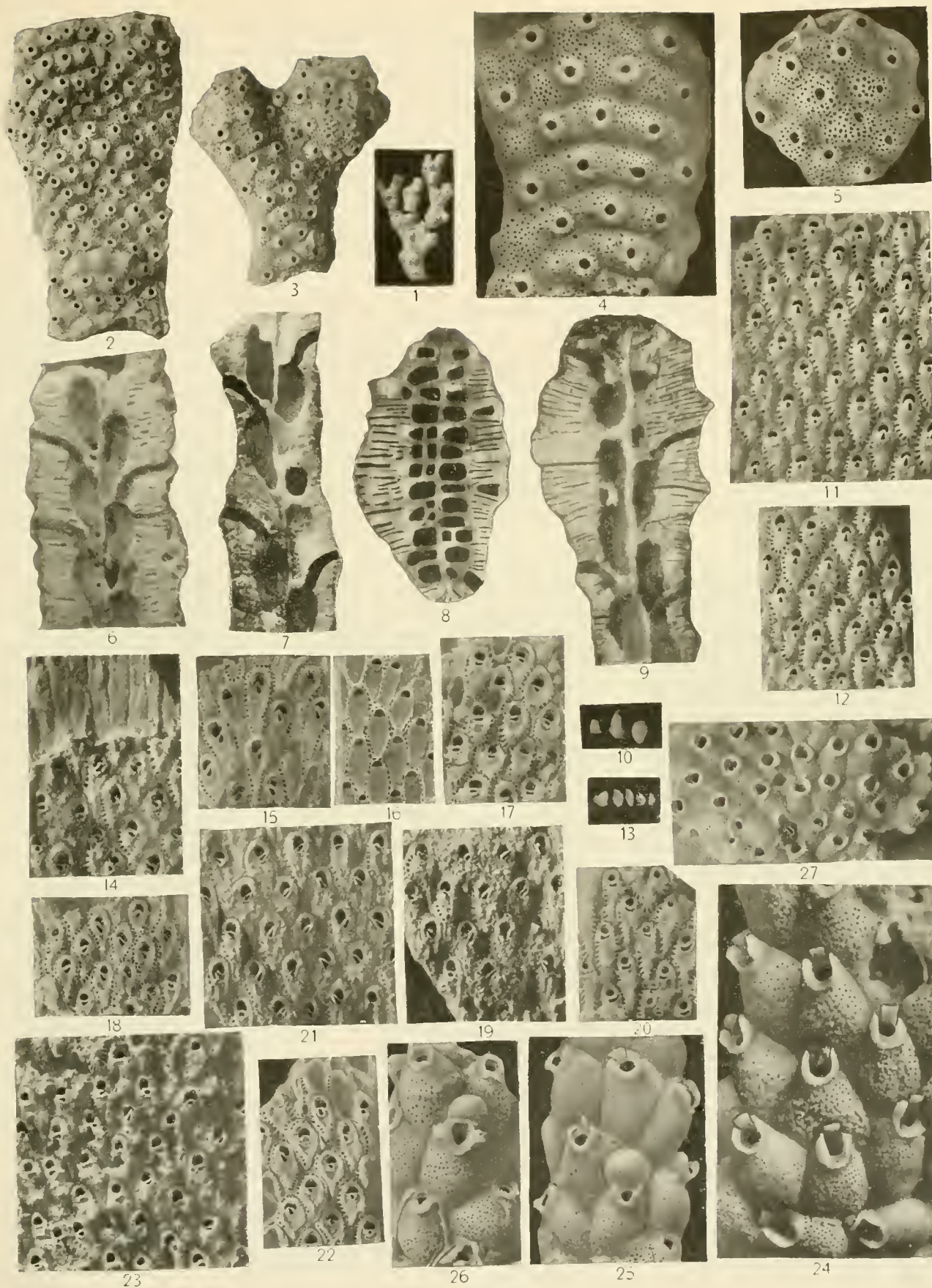
Cat. No. 62607, U.S.N.M.

FIG. 27. *Phylactella parvicella*, new species (p. 575).

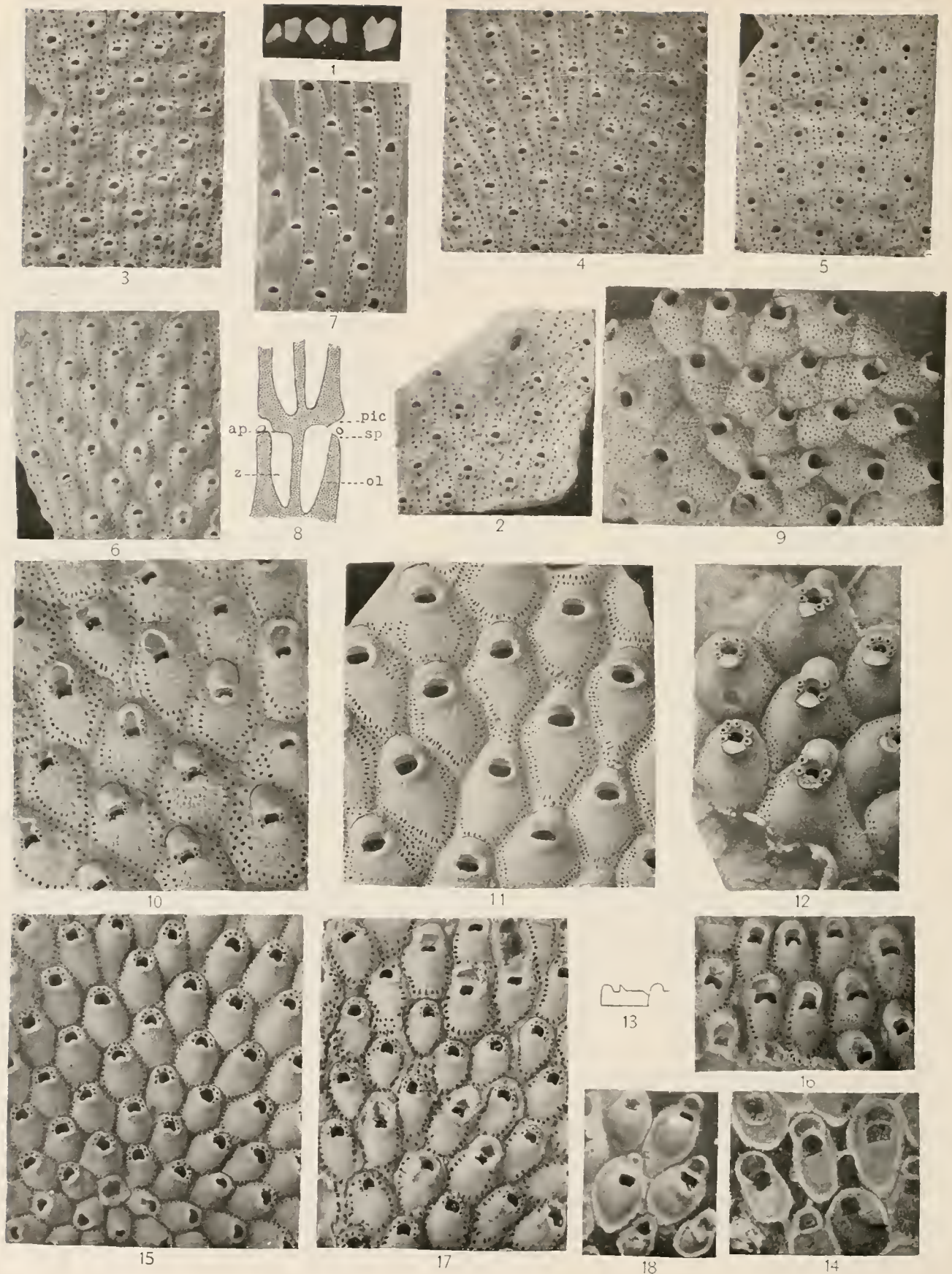
The incrusting zoarium, $\times 20$, illustrating the small size of the zooecia.

Middle Jacksonian: Baldock, Barnwell County, South Carolina.

Cat. No. 64191, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 72.

FIGS. 1-8. *Adconella folliculata* Canu and Bassler, 1917 (p. 562).

1. Fragments of the bilamellar zoarium, natural size.
2. Zoarial branch, $\times 20$, illustrating the occurrence of a large interzoecial avicularium and numerous small round avicularia.
3. Axial zooecia, $\times 20$. These are usually shorter than the marginal ones.
4. A frond, $\times 20$, composed entirely of long zooecia.
5. A common aspect of the species, $\times 20$. The surface is altered by fossilization.
6. Portion of a branch, $\times 20$, with gonoechia. The zooecia with the ascopore close to the apertura are ordinary ones while the gonoechia have the ascopore further removed.
7. Interior of zooecia, $\times 20$. The areolae, spiramen, and apertura are illustrated.
8. Longitudinal section, $\times 20$, illustrating internal structure. *ap*, aperture; *ol*, olocyst; *pic*, peristomice; *sp*, spiramen; *z*, zoecium.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 62608, U.S.N.M.

FIG. 9. *Phylactella parvicollum*, new species (p. 574).

The type-specimen of this incrusting species, $\times 20$. The peristome is little salient and has a distal tongue.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64192, U.S.N.M.

FIG. 10. *Perigastrella hexagonalis*, new species (p. 577).

The incrusting zoarium, $\times 20$, with both ordinary and ovicelled zooecia.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64193, U.S.N.M.

FIG. 11. *Perigastrella rhomboidalis*, new species (p. 577).

Surface of the bilamellar zoarium, $\times 20$. The zooecia are rhomboidal in shape and the ovicell is small and transverse.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64194, U.S.N.M.

FIGS. 12-14. *Perigastrella cyclois* Gabb and Horn, 1862 (p. 577).

12. Ovicelled and ordinary zooecia of the incrusting zoarium, $\times 20$. The salient mucro is well developed.

13. Schematic section of a zoecium published by Gabb and Horn.

14. View of the interior, $\times 20$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64195, U.S.N.M.

FIGS. 15-18. *Perigastrella oscitans*, new species (p. 578).

15. A well preserved example of this incrusting species, $\times 20$, showing the ancestrula and neighboring zooecia.

16. The usual aspect of the surface, $\times 20$.

17. A zoarium, $\times 20$, with the zoecial frontal smooth.

18. Interior of zooecia, $\times 20$.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 64196, U.S.N.M.

PLATE 73.

FIG. 1. *Perigastrella elegans*, new species (p. 579).

The incrusting zoarium, $\times 20$, illustrating the small zooecia and the numerous rows of areolae.

Middle Jacksonian: Baldock, Barnwell County, South Carolina.

Cat. No. 64197, U.S.N.M.

FIGS. 2-4. *Perigastrella ovoides* Canu and Bassler, 1917 (p. 580).

2. Ancestrular portion of the incrusting zoarium, $\times 20$. The zooecia are quite convex and the areolae are not visible.

3. Another zoarium, $\times 20$, showing the ancestrula. A salient mucro is developed, hiding the aperture more or less.

4. Interior of zooecia, $\times 20$.

Upper Jacksonian (Ocala limestone): $1\frac{1}{2}$ miles above Bainbridge, Georgia.

Cat. No. 62613, U.S.N.M.

FIGS. 5-7. *Perigastrella marilla*, new species (p. 580).

5. The incrusting zoarium, $\times 20$. The mucro is erect.

Middle Jacksonian: Rich Hill, Crawford County, Georgia.

Cat. No. 64198, U.S.N.M.

6. Zooecia, $\times 20$, in which the areolar pores are visible.

7. Ovicelled and ordinary zooecia, $\times 20$. The orifice of the ovicell is quite visible. The peristome bears eight spines.

Middle Jacksonian: 18 miles west of Wrightsville, Georgia.

Cat. No. 64199, U.S.N.M.

FIGS. 8, 9. *Perigastrella trapezoides*, new species (p. 581).

8. Ancestrular portion of the incrusting zoarium, $\times 20$. The zooecia are almost smooth; six to eight spines occur on the peristome.

9. Ovicelled and ordinary zooecia, $\times 20$. The orifice of the ovicell is plainly marked. Middle Jacksonian: Near Leno's Ferry, South Carolina.

Cat. No. 64200, U.S.N.M.

FIGS. 10-13. *Perigastrella depressa*, new species (p. 582).

10. Ovicelled zooecia of this incrusting species, $\times 20$. The aperture is shown as a slit while the orifice of the ovicell is not visible.

11. Ovicelled and ordinary zooecia, $\times 20$. Four spines occur on the latter and six on the former. No mucro is developed.

12. A zoarium, $\times 20$, showing the ovicell attached to the distal zooecium.

13. Interior of zooecia, $\times 20$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64201, U.S.N.M.

FIGS. 14-19. *Perigastrella rectilincata*, new species (p. 582).

14. Interior of ovicelled zooecia, $\times 20$.

15. Sketch of aperture, $\times 70$.

16. Ordinary and ovicelled zooecia, $\times 20$.

17. Portion of the incrusting zoarium, $\times 20$, exhibiting the labial mucro quite clearly.

18. Tangential thin section of a zooecium, $\times 100$. The olocystal elements are arranged in lines radiating from the mucro.

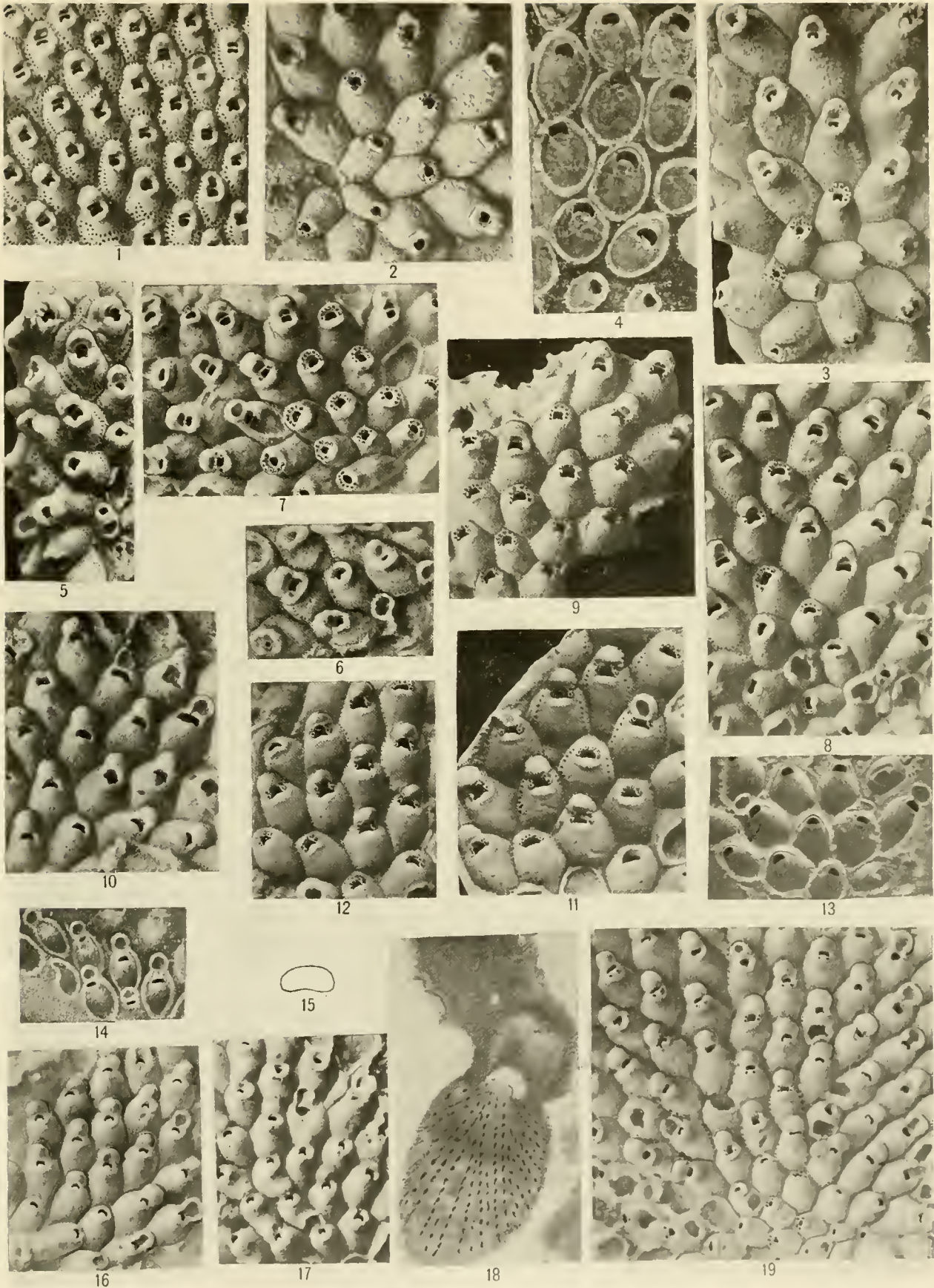
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64202, U.S.N.M.

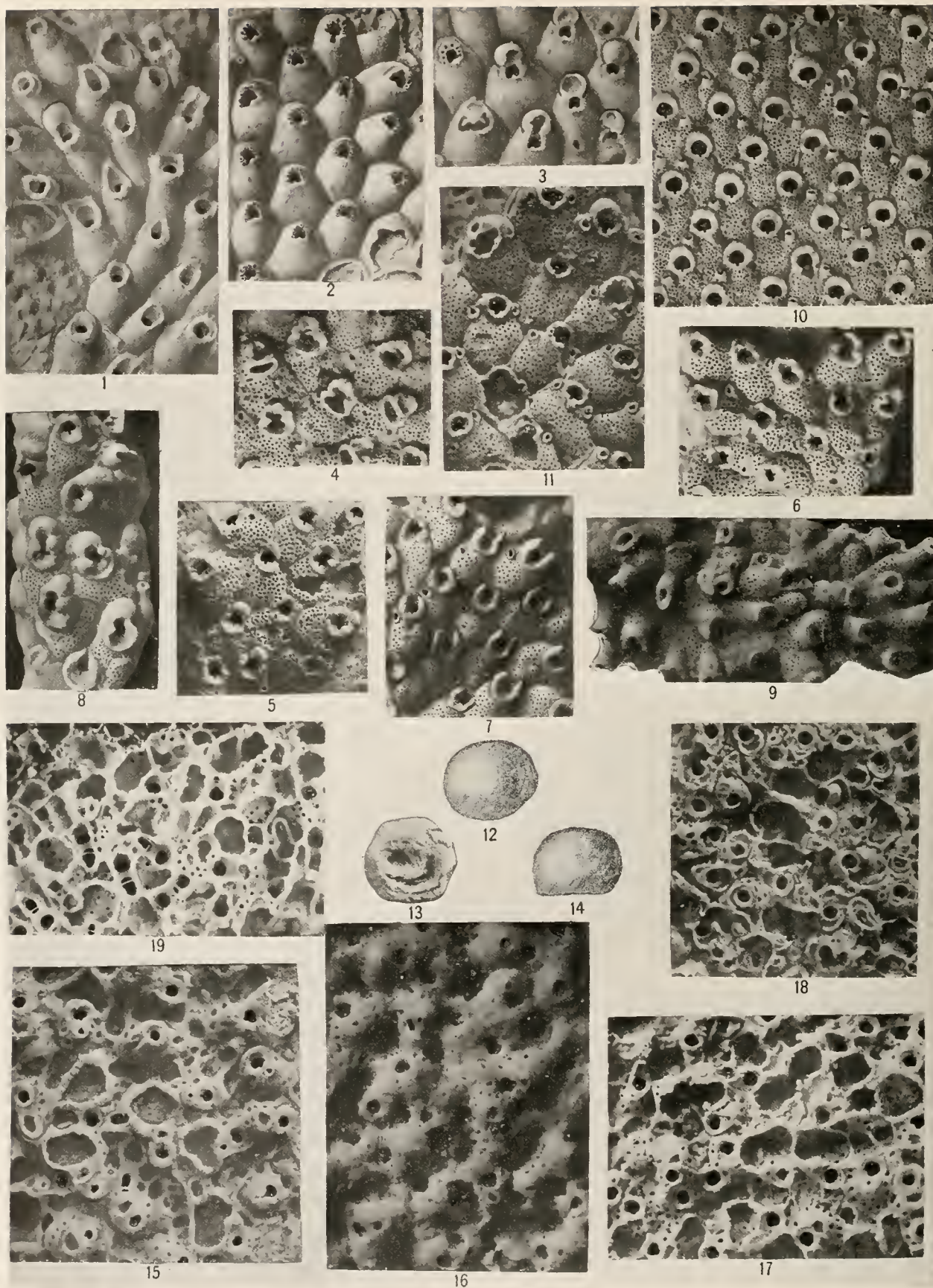
19. Area of ancestrula, $\times 20$. The ancestrula is at the lower corner.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 64203, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 74.

- FIG. 1. *Perigastrella* (?) *tubulosa*, new species (p. 585).
 Ordinary and ovicelled zooecia of this incrusting species, $\times 20$.
 Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Florida.
 Cat. No. 61204, U.S.N.M.
- FIGS. 2, 3. *Hemicyplopore parajuncta* Camu and Bassler, 1917 (p. 586).
 2. The incrusting zoarium showing ordinary zooecia, $\times 20$. The frontal is smooth and somewhat convex.
 3. Ovicelled zooecia, $\times 20$. The ovicell is quite globular and salient.
 Middle Jacksonian: Near Lemids Ferry, South Carolina.
 Cat. No. 62610, U.S.N.M.
- FIGS. 4-6. *Schizobathysella semitunata*, new species (p. 590).
 4. Ordinary zooecia of the incrusting zoarium, $\times 20$. The large transverse spiramen is complete on two zooecia.
 5. Another specimen, $\times 20$, with three ovicelled zooecia. A small round avicularium is developed.
 6. Another portion of the same specimen, $\times 20$, illustrating the linear rimule.
 Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
 Cat. No. 64205, U.S.N.M.
- FIGS. 7, 8. *Schizobathysella saccifera* Camu and Bassler, 1917 (p. 590).
 7. Ordinary zooecia of this incrusting species, $\times 20$, showing the development of the peristome.
 8. Ovicelled zooecia, $\times 20$.
 Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
 Cat. No. 62611, U.S.N.M.
- FIG. 9. *Lagenipora americana*, new species (p. 591).
 The incrusting zoarium, $\times 20$, with the characteristic long lageniform zooecia.
 Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
 Cat. No. 64206, U.S.N.M.
- FIG. 10. *Mastigophora hyndmanni* Johnston, 1847 (p. 587).
 An American Eocene example of this species, $\times 20$.
 Lower Jacksonian (Moodys marl): Jackson, Mississippi.
 Cat. No. 64207, U.S.N.M.
- FIG. 11. *Mastigophora dutertrei* Savigny-Andouin, 1826 (p. 588).
 Ordinary and ovicelled zooecia, $\times 20$. The rounded rimule is well shown.
 Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroe-ville, Alabama.
 Cat. No. 64208, U.S.N.M.
- FIGS. 12-19. *Osthimosia glomerata* Gabb and Horn, 1862 (p. 602).
 12-14. Top, side, and basal views of zoaria, natural size.
 15. Surface of a zoarium, $\times 20$, exhibiting incomplete zooecia and several large inter-zooecial avicularia. The normal zooecia show the rimule well developed.
 16. Another surface, $\times 20$, showing oblique superficial zooecia.
 Lower Jacksonian (Moodys marl): Jackson, Mississippi.
 Cat. No. 64209, U.S.N.M.
 17. Another aspect of the species, $\times 20$. The superficial zooecia are erect and the areolae are well shown. Several incomplete zooecia are present.
 18. Zooecial surface, $\times 20$, with several ovicelled zooecia.
 19. Erect superficial zooecia, incomplete zooecia, and large interzooecial avicularia, $\times 20$.
 Vicksburgian (Byram marl): Vicksburg, Mississippi.
 Cat. No. 64210, U.S.N.M.

PLATE 75.

FIGS. 1-3. *Schismopora umbonata*, new species (p. 600).

1. The fragmentary type-specimen of this discoidal species, natural size.
2. The central zooecia, $\times 20$. The erect superficial zooecia, with smooth frontal and strong umbo are shown.
3. Another view of the same zoarium, $\times 20$, showing oriented marginal zooecia at the bottom. The upper part of the figure shows the usual superficial zooecia and several incomplete zooecia.

Upper Jacksonian (Ocala limestone): Alachua, Florida.

Cat. No. 64211, U.S.N.M.

FIGS. 4-6. *Schismopora orbicularis*, new species (p. 600).

4. The unilamellar zoarium, natural size.
5. Celluliferous side of the type. $\times 20$. The superficial zooecia are oriented.
6. Basal side of the same, $\times 20$.

Middle Jacksonian: One-half mile southeast of Georgia Kaolin Co.'s mine, Twiggs County, Georgia.

Cat. No. 64212, U.S.N.M.

FIGS. 7-15. *Schismopora globosa*, new species (p. 598).

- 7-10. Top and side views of the globose zoarium, natural size.
11. Superficial zooecia, $\times 20$. The frontal avicularium is represented by a large cleft. The aperture has a broad, triangular rimule.
12. Another aspect of the surface, $\times 20$. Several incomplete zooecia are present.
13. Transverse thin section, $\times 10$.
14. A portion of the same section, $\times 100$. The oolycystic nature of the walls is illustrated.
15. Another part of this section, $\times 100$.

Lower Jacksonian (Moodys marl): Jackson, Mississippi.

Cat. No. 64213, U.S.N.M.

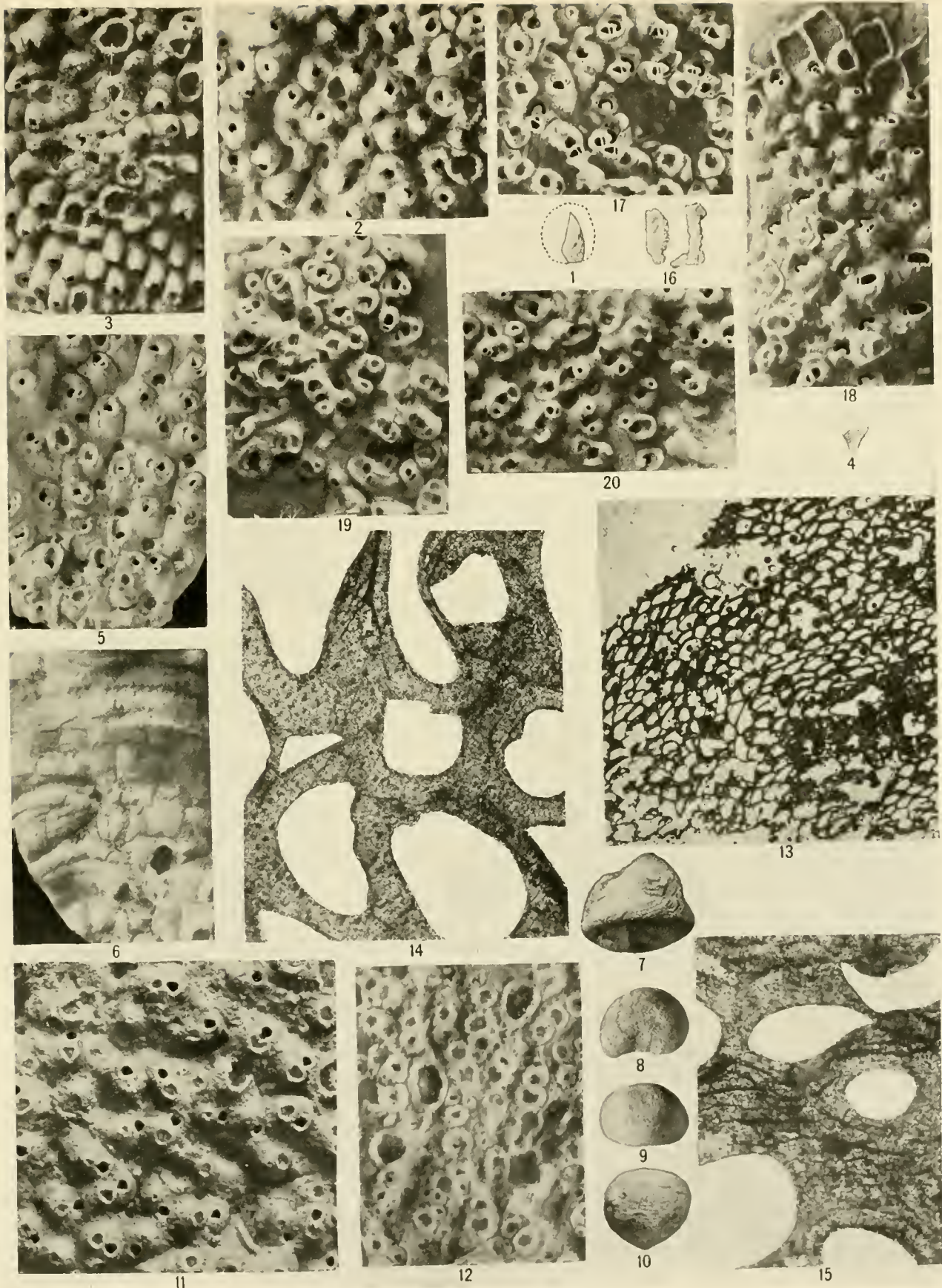
FIGS. 16-20. *Holoporella altirostris*, new species (p. 606).

16. Two small masses of the intersting zoarium, natural size.
17. Surface, $\times 20$, showing erect superficial zooecia with large oral avicularium. Several ovicelled zooecia are present.
18. Edge of a zoarium, $\times 20$. A prominent tongue hides the zooecial apertures.
19. An aspect of the species, $\times 20$, in which the aperture is very deep. Several incomplete zooecia are developed.
20. Ovicelled zooecia, $\times 20$. The ovicells and the large frontal avicularia are frequently broken.

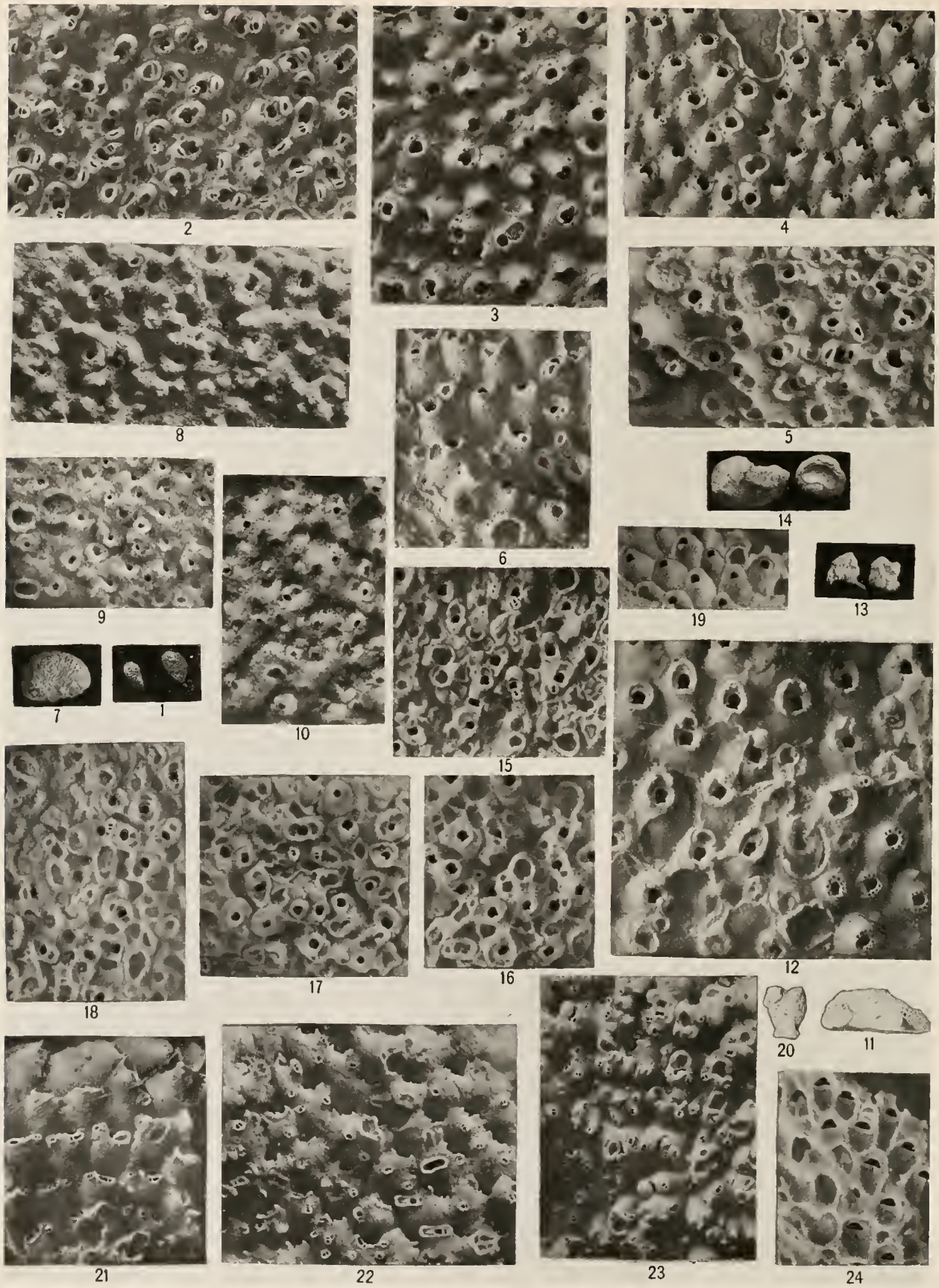
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64214, U.S.N.M.

Cat. No. 64215, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 76.

FIGS. 1-6. *Holoporella fissurata*, new species (p. 605).

1. Two examples of the small globular zoarium, natural size.
2. Ovicelled zooecia, of a zoarium incrusting a shell, $\times 20$, with the fissure in the ovicell quite visible.
3. Another view of the same zoarium, $\times 20$.
4. Marginal zooecia of the same zoarium, $\times 20$. The zooecia are oriented and the areolae are visible.
5. Another portion of the zoarium, $\times 20$. The ovicells are broken. Several incomplete zooecia are shown.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 64216, U.S.N.M.

6. The Vicksburgian form of the species, $\times 20$.

Vicksburgian (Marianna limestone): Murder Creek, east of Castlebury, Alabama.

Cat. No. 64217, U.S.N.M.

FIGS. 7-10. *Holoporella micropora*, new species (p. 610).

7. The free, globular zooecium, natural size.
8. Usual aspect of the zooecia, $\times 20$, with the salient beak quite visible.
9. Surface of zoarium, $\times 20$, with several incomplete zooecia.
10. Zooecia, $\times 20$, illustrating the minute apertura, the smooth frontal, and the salient beak.

Upper Jacksonian (Ocala limestone): One and one-half miles above Bainbridge, Georgia.

Cat. No. 64218, U.S.N.M.

FIGS. 11, 12. *Holoporella crassicollis*, new species (p. 607).

11. The unilamellar incrusting zoarium, natural size.
12. Surface of the same specimen, $\times 20$. The thick salient peristome is quite evident.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64219, U.S.N.M.

FIGS. 13-19. *Holoporella separata*, new species (p. 609).

- 13, 14. Four examples of the small, massive zoarium, natural size.
15. Ovicelled zooecia, $\times 20$.
16. Superficial zooecia, $\times 20$. They are widely separated and the form of the apertura is shown.
17. Superficial zooecia, $\times 20$, with a cicatrix before each apertura.
18. Another aspect of the surface, $\times 20$.
19. Interior of zooecia, $\times 20$.

Middle Jacksonian: One-half mile southeast of Georgia Kaolin Co.'s mine, Twiggs County, Georgia.

Cat. No. 64220, U.S.N.M.

FIGS. 20-24. *Holoporella birostrata*, new species (p. 612).

20. The incrusting zoarium, natural size.
21. Submarginal zooecia, $\times 20$. They are oblique and oriented.
22. Zooecia, $\times 20$, with interzooecial avicularia.
23. Ovicelled and ordinary zooecia, $\times 20$.
24. Interior of zooecia, $\times 20$, showing form of apertura and the internal canal.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64221, U.S.N.M.

PLATE 77.

FIGS. 1-7. *Holoporella dunicornis*, new species (p. 609).

1-3. Three views of zoaria, natural size, showing the horn-like protuberance.

4. Usual aspect of the zooecial surface, $\times 20$.

5. Zooecia, $\times 20$, with the umbo undeveloped. Several interzooecial avicularia are present.

6. Zooecia, $\times 20$, with broken umbo.

7. Transverse thin section, $\times 20$, showing the cumulation of the zooecia.

Jacksonian (Zenglodon zone): Cocoa Post Office, Choctaw County, Alabama.

Cat. No. 64222, U.S.N.M.

FIGS. 8-11. *Holoporella pisiformis*, new species (p. 608).

8. Three of the small, globular zoaria, natural size.

9. Zooecia, $\times 20$, some of which have two apophyses, separated by a rimule.

10. Zooecia, $\times 20$, with the apophyses sometimes joined, forming a spiramen.

11. Zooecia with a salient muero, $\times 20$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 64223, U.S.N.M.

FIGS. 12-21. *Kleidionella cristata*, new species (p. 620).*

12. A zoarium, natural size, restored from fragments.

13. View of young zooecia, $\times 20$.

14. A young branch, $\times 20$, formed of oriented zooecia.

15. Oriented and cumulate zooecia, $\times 20$.

16. View of the cumulate zooecia, on the median crest, $\times 20$.

17. Cumulate zooecia at the base of a zoarium, $\times 20$. Several interzooecial avicularia are present.

18. Edge of frond, $\times 20$, with interzooecial avicularia.

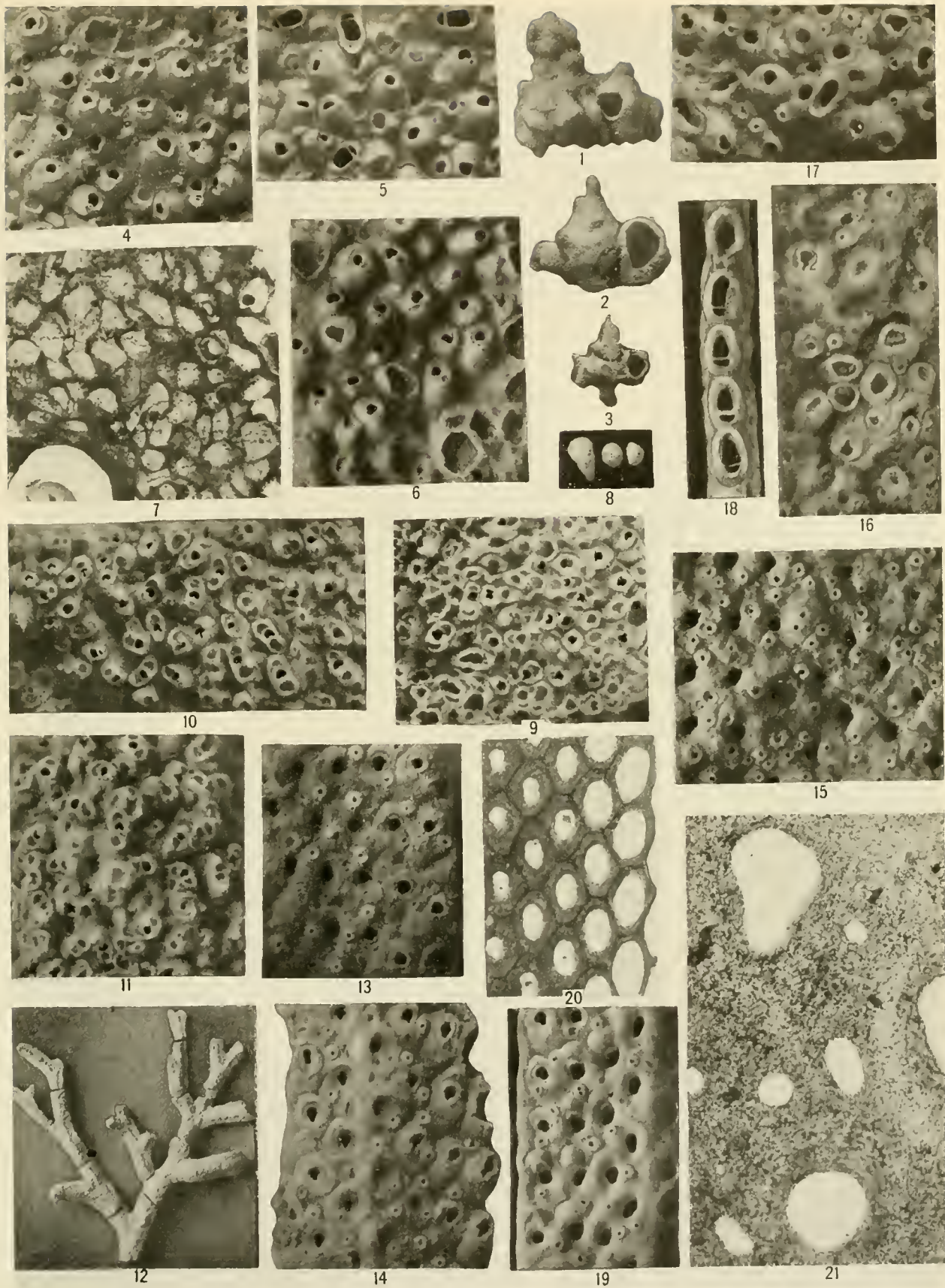
19. Portion of a branch with the median crest, $\times 20$, showing several ovicelled zooecia.

20. Tangential thin section, $\times 20$.

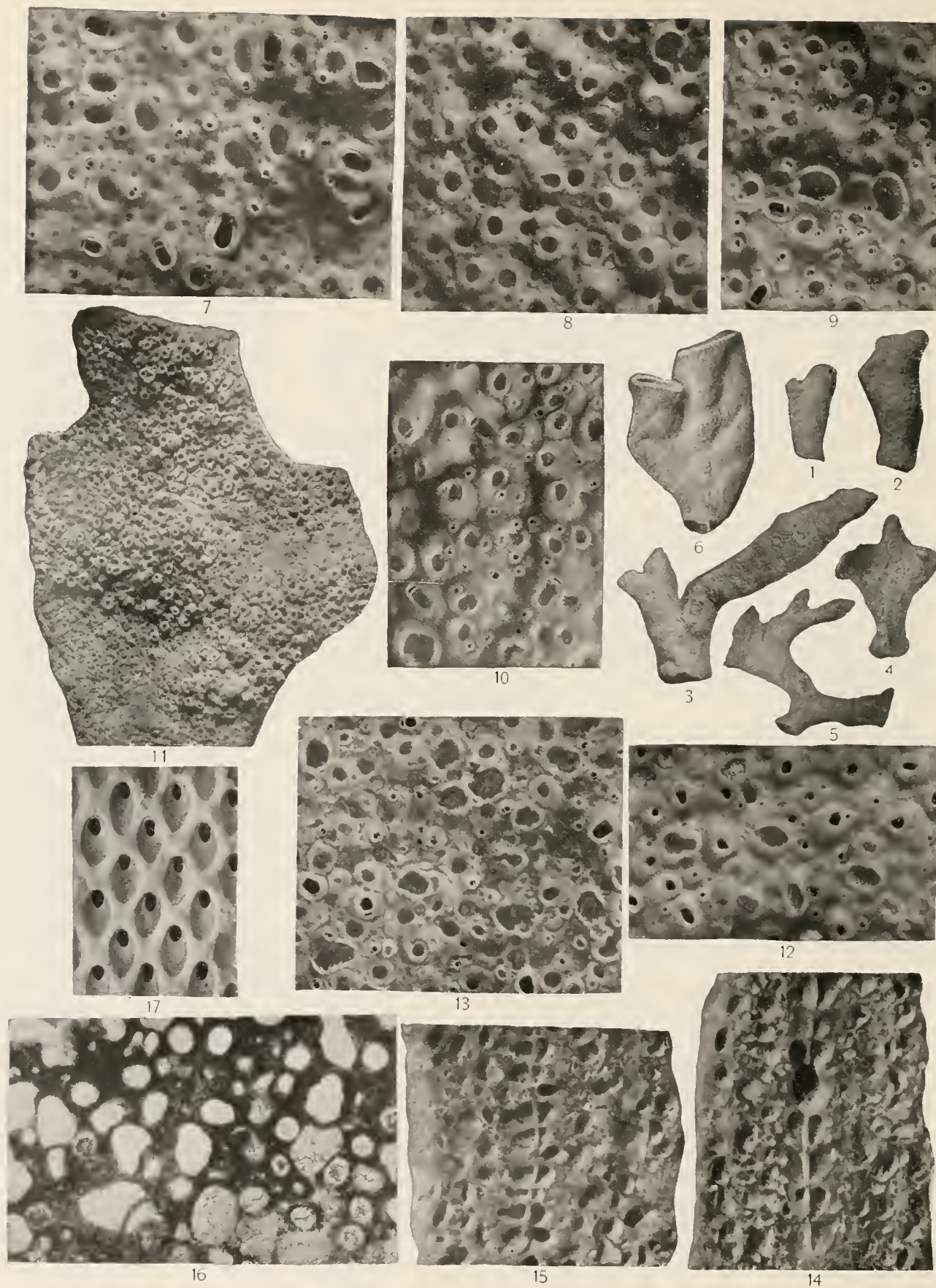
21. A portion of the same, $\times 100$, showing olocystal nature of the frontal.

Middle Jacksonian: Near Lenuds Ferry, South Carolina.

Cat. No. 64224, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 78.

FIGS. 1-17. *Kleidionella grandis*, Canu and Bassler, 1917 (p. 617). (See also plate 79, fig. 1.)

- 1-6. Various forms of the large bifurcated fronds, natural size.
7. Surface of zoarium, $\times 20$, in which many of the large interzooecial avicularia and the small frontal avicularia have undergone regeneration.
8. Portion of zoarium, $\times 20$, illustrating both deep and superficial zooecia.
9. An example, $\times 20$, with several incomplete zooecia, and illustrating a group of large zooecia.
10. Another portion of the same specimen shown in figure 9, $\times 20$, but exhibiting a group of small zooecia.
- Jacksonian (Zenglodon zone): Cocoa Post Office, Choctaw County, Alabama.
Cat. No. 62613, U.S.N.M.
11. A zoarium, $\times 10$, showing groups of large and of small zooecia.
Middle Jacksonian: Three and one-half miles south of Perry, Georgia.
Cat. No. 64225, U.S.N.M.
- 12, 13. Views of the zoarial surface, $\times 20$, showing two aspects of the zooecia and avicularia.
14. Longitudinal section, $\times 20$, exhibiting the two inner rows of oriented zooecia and the many rows of cumulate zooecia.
15. Transverse section of a frond, $\times 20$. The oriented zooecia are seen on each side of the middle line, followed by numerous rows of cumulate zooecia.
16. A deep tangential thin section, $\times 20$.
17. Interior of oriented zooecia, $\times 20$. The oval form of the apertura is visible.
Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 64226, U.S.N.M.

PLATE 79.

FIG. 1. *Kleidionella grandis* Canu and Bassler, 1917 (p. 617). (See also plate 78.)

Tangential thin section, $\times 20$, through zooecia near the surface.

Lower Jacksonian (Moody's marl); Jackson, Mississippi.

Cat. No. 64226, U.S.N.M.

FIGS. 2-14. *Kleidionella lobata*, new species (p. 619).

2. Views, natural size, of the lobed, bifoliate, bifurcated zoarium.

3. A larger much branched example, natural size.

4. Young zooecia at the extremity of a frond, $\times 20$. The formation of the ovicell may be noted.

5. Portion of a frond, $\times 20$, with a few scattered cumulate zooecia.

6. Zooecia, $\times 20$, with numerous small elliptical avicularia, some with pivot.

7. A frond, $\times 20$, with several interzooecial avicularia and numerous small avicularia with pivot.

8. Zooecia, $\times 20$, with numerous broken ovicells.

9. Portion of an example, $\times 20$, with an isolated group of cumulate zooecia.

10. Part of a frond, $\times 10$. Cumulate zooecia are developed at the base, and the usual oriented zooecia, with numerous small avicularia, above.

11. The basal part of the specimen shown in figure 10, $\times 20$.

12. Tangential thin section, $\times 20$, showing the dense olocystal structure of the zooecia.

13. Longitudinal section, $\times 20$.

14. View of the interior of zooecia, $\times 20$.

Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.

Cat. No. 64227, U.S.N.M.

FIGS. 15-18. *Stichopora protecta* Koschinski, 1885 (p. 625).

15. Surface of the cupuliform zoarium, $\times 20$, with normal and ovicelled zooecia.

16. Basal surface of a fragment, $\times 20$.

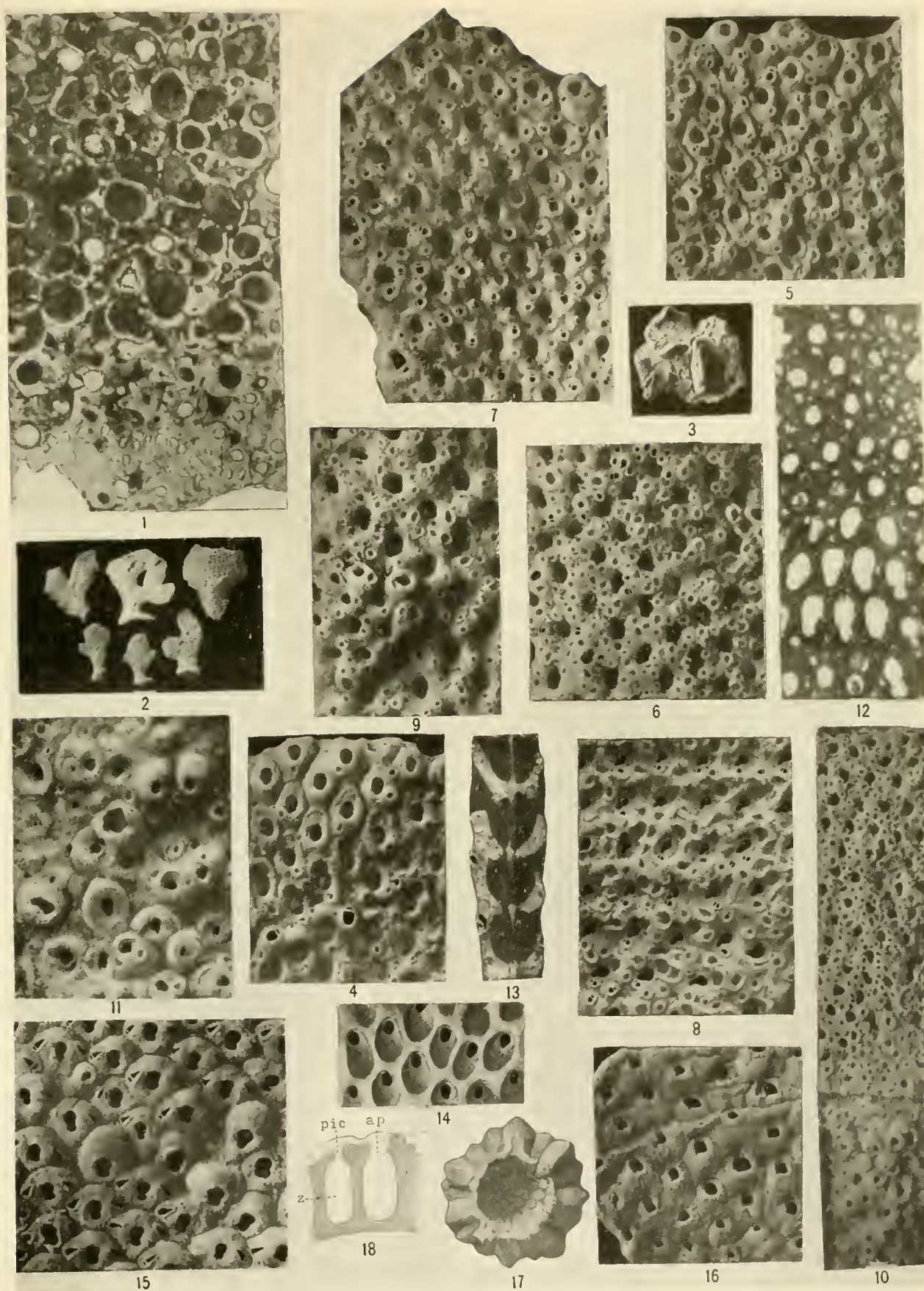
17. Lower side of zoarium, $\times 10$.

18. Sketch of a longitudinal section, $\times 20$.

ap. aperture; *pic.* peristomice; *z.* zoarium.

Middle Jacksonian (Castle Hayne limestone); Wilmington, North Carolina.

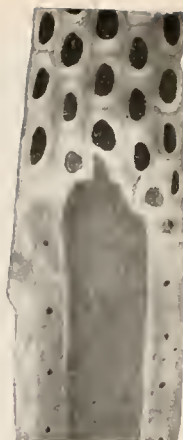
Cat. No. 64228, U.S.N.M.



JACKSONIAN CHEILOSTOMATOUS BRYOZOA.



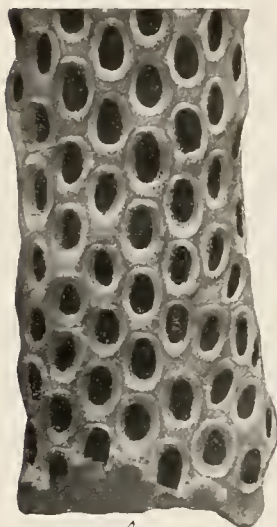
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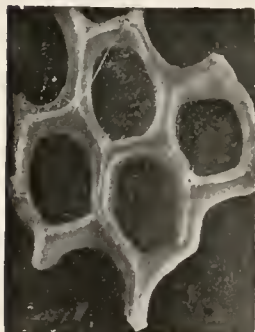
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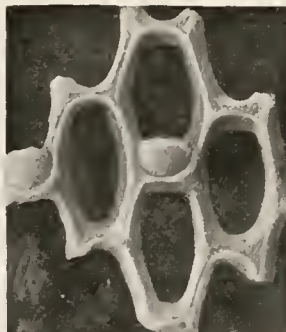
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11



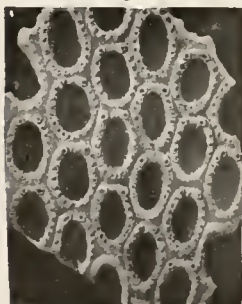
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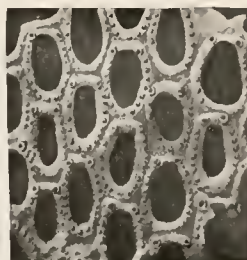
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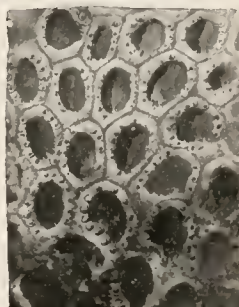
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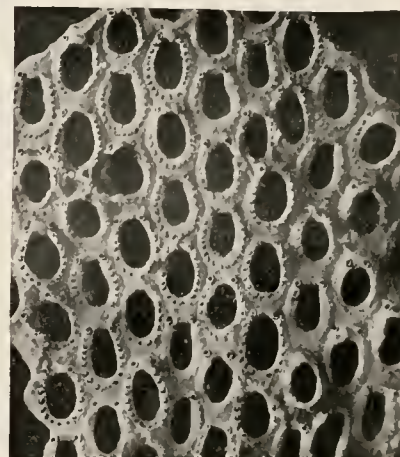
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14



15

VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 80.

FIG. 1. *Herpetopora danica* Lang, 1914 (p. 81).

A zoarium, $\times 20$, branching unilaterally. The zooecia show the absence of the basal oöcyst and their caudal portion very little developed if at all.

Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.

Cat. No. 64229, U.S.N.M.

FIGS. 2-7. *Membraniporina tubulosa*, new species (p. 98).

2. Two of the small tubular zoaria, natural size.

3. Fragment of a broken zoarium, $\times 20$, exhibiting the hollow interior and the septulae of the lateral walls.

4. Portion of a normally growing zoarium, $\times 20$, with the usual characters of the zooecia.

5. Zoarium of abnormal growth, $\times 20$, with distorted zooecia at the upper end and a calcified zooecium in the lower part.

6. A bifurcated zoarium, $\times 20$.

7. Tangential thin section, $\times 100$, illustrating microscopic structure of the frontal wall.

Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.

Cat. No. 64230, U.S.N.M.

FIGS. 8-11. *Membraniporina arcana*, new species (p. 99).

8. A fragment, $\times 20$, preserving only four broad zooecia.

9, 10. Two small fragments of zoaria, $\times 20$, with zooecia of the more usual type and with several ovicell-like structures in their proximal portion.

11. A more complete fragment, $\times 20$, with elongated zooecia and two of the supposed ovicells.

Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.

Cat. No. 64231, U.S.N.M.

FIGS. 12-15. *Hincksia elegans*, new species (p. 115).

12, 13. Two well preserved fragments, $\times 20$, with the characteristic specific characters, but without ovicells.

14. A worn zoarium, $\times 20$, but having the spines still visible.

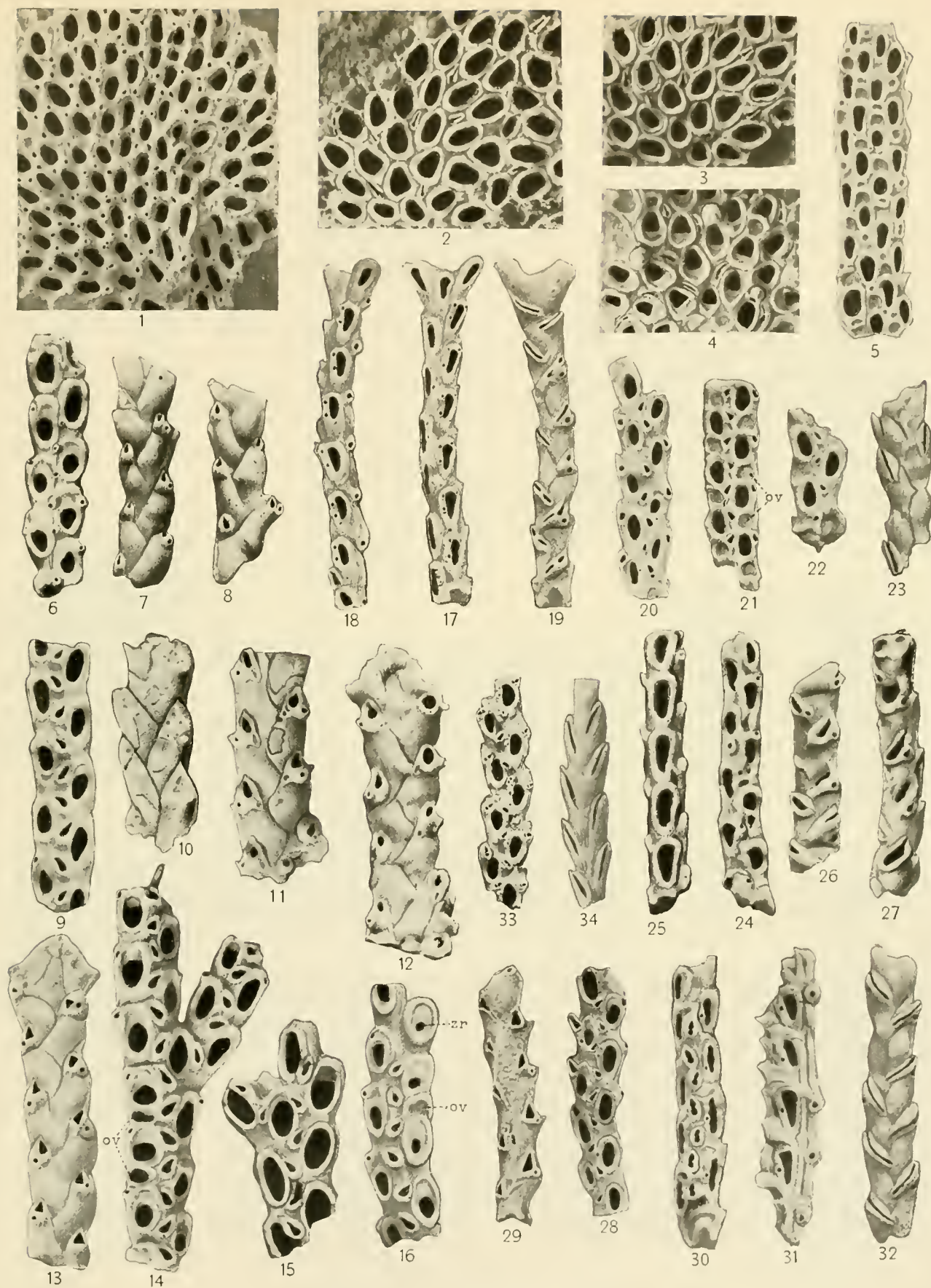
15. Surface of a zoarium, $\times 20$, with some zooecia preserving ovicells.

Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.

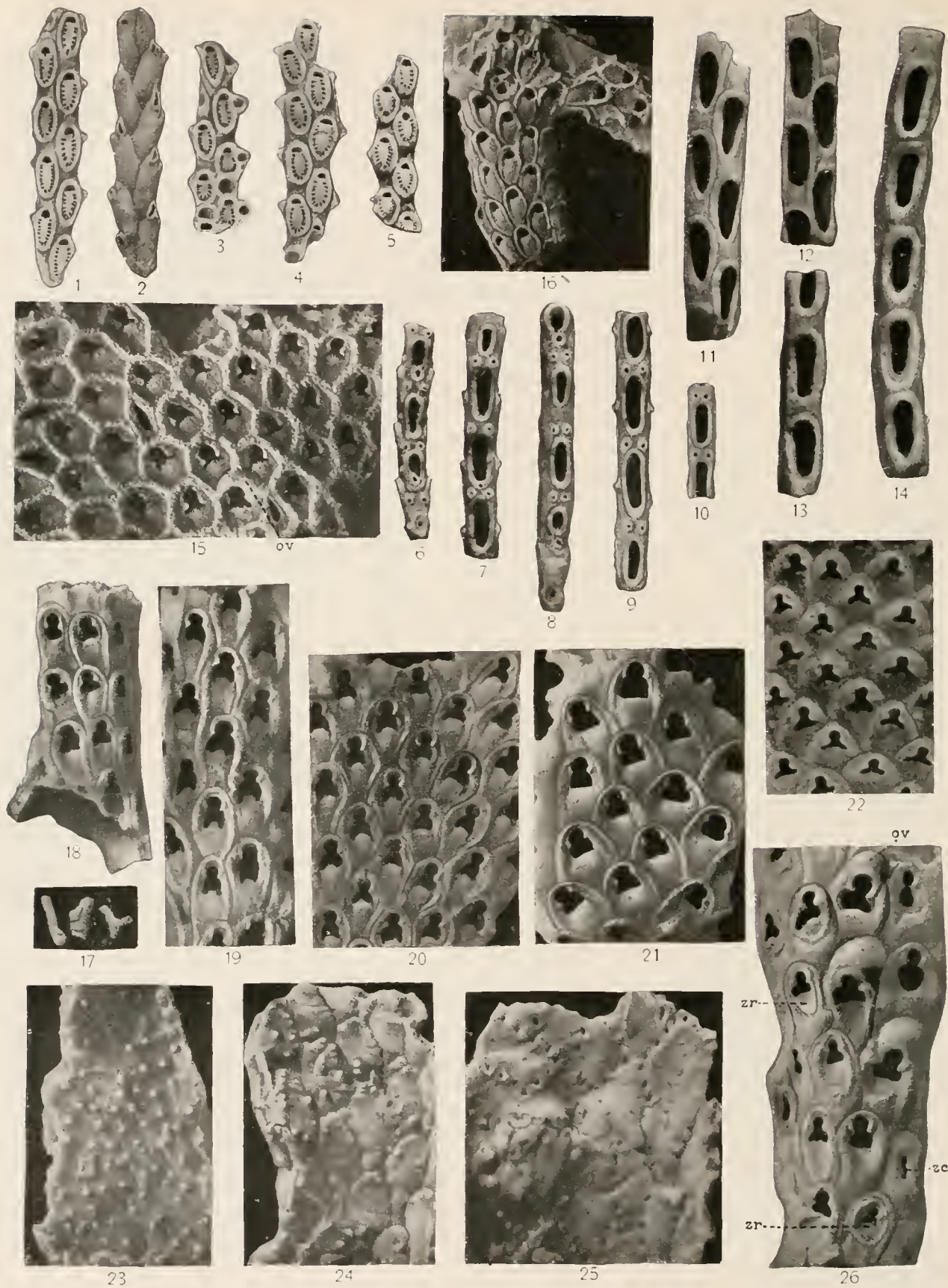
Cat. No. 64232, U.S.N.M.

PLATE 51.

- FIG. 1. *Membranodocium lowei*, new species (p. 121).
The type-specimen of the species, $\times 20$ with small zooecia and avicularia or interopesia cavities.
Vicksburgian (Byram marl): Vicksburg, Mississippi.
Cat. No. 64233, U.S.N.M.
- FIGS. 2, 3. *Collopora vicina*, new species (p. 155).
2. Zoarium, $\times 20$, with the usual form and arrangement of the zooecia and avicularia.
3. Another zoarium, $\times 20$, with five regenerated zooecia having double rims.
Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.
Cat. No. 64234, U.S.N.M.
- FIG. 4. *Amphiblestrum curvatum*, new species (p. 162).
Portion of the type, $\times 20$, with both ovicelled and nonovicelled zooecia and well marked curved avicularia.
Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.
Cat. No. 64235, U.S.N.M.
- FIG. 5. *Stamnocella intermedia*, new species (p. 173).
View of the Bugula-like zoarium, $\times 20$, with large ovicell and conspicuous avicularia.
Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64236, U.S.N.M.
- FIGS. 6-8. *Scrupocellaria cookei*, new species (p. 186).
6. Frontal face of a segment, $\times 25$. The small rounded distal avicularia and the presence of a lamella in some of the opesia are to be noted.
7, 8. Two views of the dorsal side, $\times 25$, showing the straight, pointed vibraculum and the associated radicular pore.
Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.
Cat. No. 64237, U.S.N.M.
- FIGS. 9-16. *Scrupocellaria mihneri*, new species (p. 186).
9. Frontal view of a segment, $\times 25$, exhibiting the large, distinct, elliptical zooecia and the very large frontal avicularium.
10. Dorsal side of a fragmentary segment, $\times 25$, with slightly convex zooecia.
11. Dorsal side of a segment, $\times 25$, showing the two distinct component layers.
Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64238, U.S.N.M.
12. Dorsal, $\times 25$, of specimen with large distinct vibracula and conspicuous radicular pore situated on a small elevation.
Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.
Cat. No. 64239, U.S.N.M.
13. Another dorsal view, $\times 25$.
Vicksburgian (Marianna limestone): Murder Creek, east of Castlebury, Conecuh County, Alabama.
Cat. No. 64240, U.S.N.M.
14. Frontal surface of a branching segment, $\times 25$, with several ovicelled zooecia (ov).
Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64238, U.S.N.M.
15. Branching fragment, $\times 25$, with unusually large opesia.
16. Frontal surface, $\times 25$, showing a calcified zooecium (zr), ovicell (ov), and opesia lamella on some zooecia.
Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.
Cat. No. 64239, U.S.N.M.
- FIGS. 17-19. *Scrupocellaria triangulata*, new species (p. 188).
17. Frontal view, $\times 25$, of an almost entire segment. The mural rim bears traces of the scutum.
18. Lateral view of the same segment, $\times 25$.
19. Dorsal side of the same, $\times 25$. The large oblique vibraculum and the prominent radicular pore are characteristic features.
Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64241, U.S.N.M.
- FIGS. 20-23. *Scrupocellaria resseri*, new species (p. 187).
20. Frontal surface of a segment, $\times 25$.
21. Fragmentary segment, $\times 25$, having all zooecia provided with ovicells (ov).
22. Small fragment, $\times 25$, with larger opesia than usual.
Alabama.
23. Dorsal side, $\times 25$, exhibiting the distinct rectilinear groove of the vibraculum.
Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64242, U.S.N.M.
- FIGS. 24-27. *Scrupocellaria willardi*, new species (p. 188).
24. Frontal view, $\times 25$, showing zooecia with indistinct outlines.
25. Lateral view of the frontal side, $\times 25$, illustrating pyriform shape of the opesia.
26. Dorsal side of a small fragment, $\times 25$. The indistinct zooecia and the large vibracula are especially noteworthy.
27. Lateral view of the dorsal side, $\times 25$.
Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.
Cat. No. 64243, U.S.N.M.
- FIGS. 28-29. *Scrupocellaria vaughani*, new species (p. 189).
28. Segment, $\times 25$, showing several of the large triangular distal avicularia.
29. Dorsal side of the same, $\times 25$, with the large triangular vibracula (avicularia).
Vicksburgian (Red Bluff formation): Seven and one-half miles southwest of Bladon Springs, Alabama.
Cat. No. 64244, U.S.N.M.
- FIGS. 30-32. *Scrupocellaria rathbuni*, new species (p. 189).
30. Frontal view, $\times 25$, of a segment. The frontal avicularia with lateral denticles are most conspicuous, the zooecia being seen only in perspective.
31. Lateral view, $\times 25$, showing the real form of the opesum and the projection of the frontal avicularium.
32. Dorsal side of the same specimen, $\times 25$, with the long groove of the vibraculum most conspicuous.
Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64245, U.S.N.M.
- FIGS. 33-34. *Coberca boryi* Audouin, 1826 (p. 191).
33. Frontal view, $\times 25$, of a fragment of this nonarticulated species.
34. Dorsal side, $\times 25$, of the same example.
Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64246, U.S.N.M.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 82.

FIGS. 1-5. *Scrupocellaria clausa*, new species (p. 190).

1. Frontal side of a segment, $\times 25$, with the opesia covered by a membrane with lateral ribs.
2. Dorsal side of the same, $\times 25$. In this view the zooecia are distinct and convex and the vibraculum straight and acuminate.
3. Portion of a segment, $\times 25$, with several ovicelled zooecia.
4. 5. Frontal side of two other segments, $\times 25$.

Vicksburgian (Glendon member of Marianna limestone) West bank of Conecuh River, Escambia County, Alabama.

Cat. No. 64247, U.S.N.M.

FIGS. 6-10. *Nellia oculata* Busk, 1852 (p. 196).

6. Segment, $\times 25$, with radicular pores below the opesia.
7. Upper portion of a segment, $\times 25$, illustrating the normal aspect of the zooecia.
8. Example, $\times 25$, in which the lowermost zooecium bears only a radicular pore.
9. Segment, with elongate zooecia, $\times 25$.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 64249, U.S.N.M.

10. Small fragment, $\times 25$.

Vicksburgian (Byram marl): Byram, Mississippi.

Cat. No. 64250, U.S.N.M.

FIGS. 11-14. *Heterocella vicksburgica*, new species (p. 198).

11. 12. Two fragments, $\times 25$, showing the two rows of smaller converging zooecia.
13. 14. Two other portions of segments, $\times 25$, illustrating the larger divergent zooecia.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 64251, U.S.N.M.

FIG. 15. *Diplophloeos lineatum*, new species (p. 219).

Surface of the incrusting zoarium, $\times 20$, with occasional linear opesiular indentations in the zooecia and one zooecium with ovicell (*ov*).

Vicksburgian (Marianna limestone): Near Claiborne, Monroe County, Alabama.

Cat. No. 64252, U.S.N.M.

FIG. 16. *Rosselliana parvipora*, new species (p. 228).

The type-specimen, $\times 20$, incrusting another bryozoan. Several zooecia are provided with endozooecial ovicells.

Vicksburgian ("Chimney rock" member of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 64253, U.S.N.M.

FIGS. 17-26. *Floridinella vicksburgica* Cann and Bassler, 1917 (p. 229).

17. Three zoaria, natural size.
18. A small zoarium, $\times 25$, showing its multilamellar, hollow, cylindrical form.
19. Surface of an example, $\times 25$, with narrow, elongate zooecia.
20. Surface of a zoarium, $\times 25$, in which the lateral grooves are well developed.
21. A specimen with wide zooecia, $\times 25$.
22. A zoarium, $\times 25$, with broad zooecia having a small opesinum and linear opesiules.
23. Non celluliferous face of zoarium, $\times 25$, with hydrostatic tuberosities and with zooecial outlines not visible.
24. View of the same face in another specimen, $\times 25$, with the zooecia plainly visible.
25. Another view, $\times 25$, with the zooecia marked out by depressions.
26. Portion of a zoarium, $\times 25$, with ovicelled zooecia (*ov*), calcified zooecia (*zc*), and zooecia showing total regeneration (*zr*).

Vicksburgian (Marianna limestone): One mile north of Monroeville, and west bank Conecuh River, Escambia County, Alabama.

Cat. No. 64254, U.S.N.M.

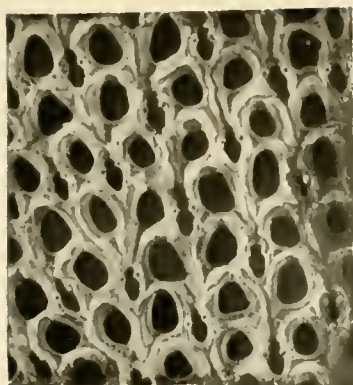
PLATE 83

FIGS. 1-11. *Lunularia vicksburgensis* Conrad, 1847 (p. 249).

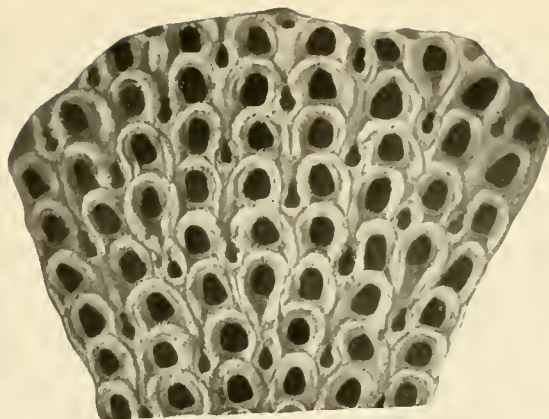
1. Surface of a zoarium, $\times 20$, illustrating normal shape and arrangement of the zooecia and vibracula.
2. Portion of another zoarium, $\times 20$, showing the granular deposit of the ectocyst.
3. Another example, $\times 20$, with well marked fossettes on the condyles of the vibracula.
4. An entire zoarium, $\times 20$, showing the ancestrula at the center perforated by a pore.
This zooecium is hydrostatic.
5. Inner side of a zoarium, $\times 20$, illustrating irregular arrangement of the segments.
6. Celluliferous side of a fragment, $\times 20$, showing margin.
7. Edge view of a fractured zoarium, $\times 20$. One pair of lateral septulae to each zooecium and minute closely arranged interzooecial canals may be noted. Two segments growing in juxtaposition.
8. Inner side of zoarium, $\times 20$, exhibiting a regular arrangement of the segments.
9. Inner face of a fragmentary zoarium, $\times 20$, showing that the larva has attached itself to a large object.
10. Transverse fracture, $\times 20$, showing a large distal septula to each zooecium. The segments in their growth fit into each other.
11. Zoaria, natural size.
Vicksburgian (Byram marl): Byram, Mississippi.
Cat. No. 64255, U.S.N.M.

FIGS. 12-16. *Lunularia tintinabula*, new species (p. 251).

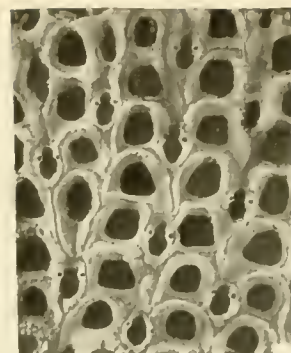
12. Fragments of zoaria, natural size.
13. Celluliferous side of a fragmentary zoarium, $\times 20$, with the usual characters of the normal and hydrostatic zooecia.
14. Small fragment, $\times 20$, in which the fragile exterior surface has been removed from the lower zooecia. The vibracula of the lower layer have no condyles, and the zooecial opesia of this layer are larger than those of the outer one.
15. A fragment, $\times 20$, exhibiting the various aspects of the hydrostatic zooecia.
16. Inner face of a zoarium, $\times 20$, showing quite convex radial rows, with large scattered pores.
Vicksburgian (Red Bluff member): Red Bluff, Wayne County, Mississippi.
Cat. No. 64256, U.S.N.M.



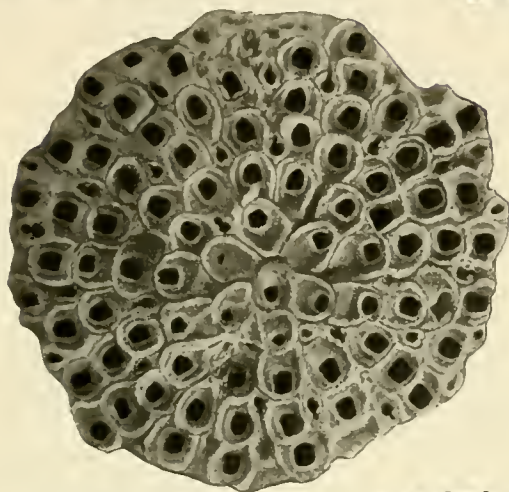
1



2



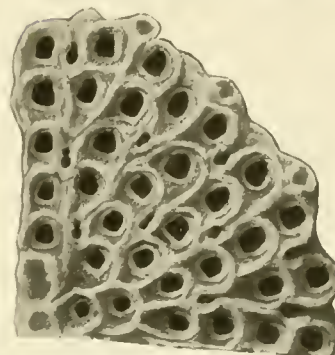
3



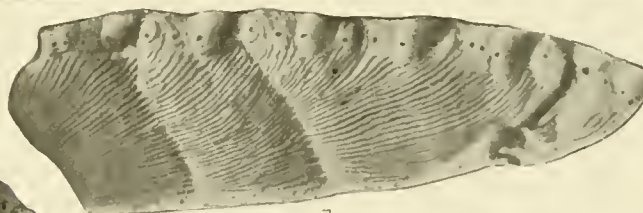
4



5



6



7



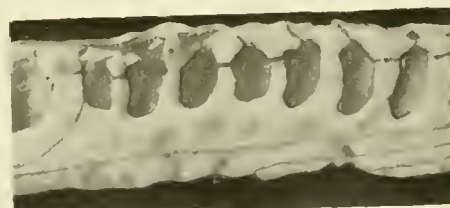
11



8



9



10



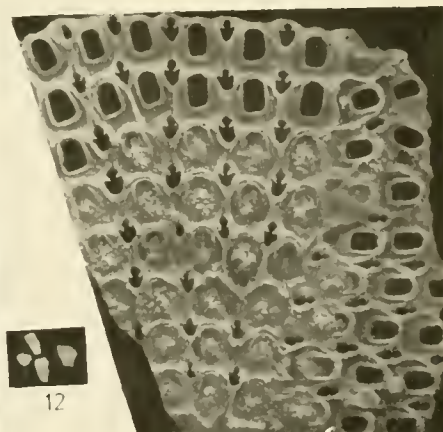
14



15



16

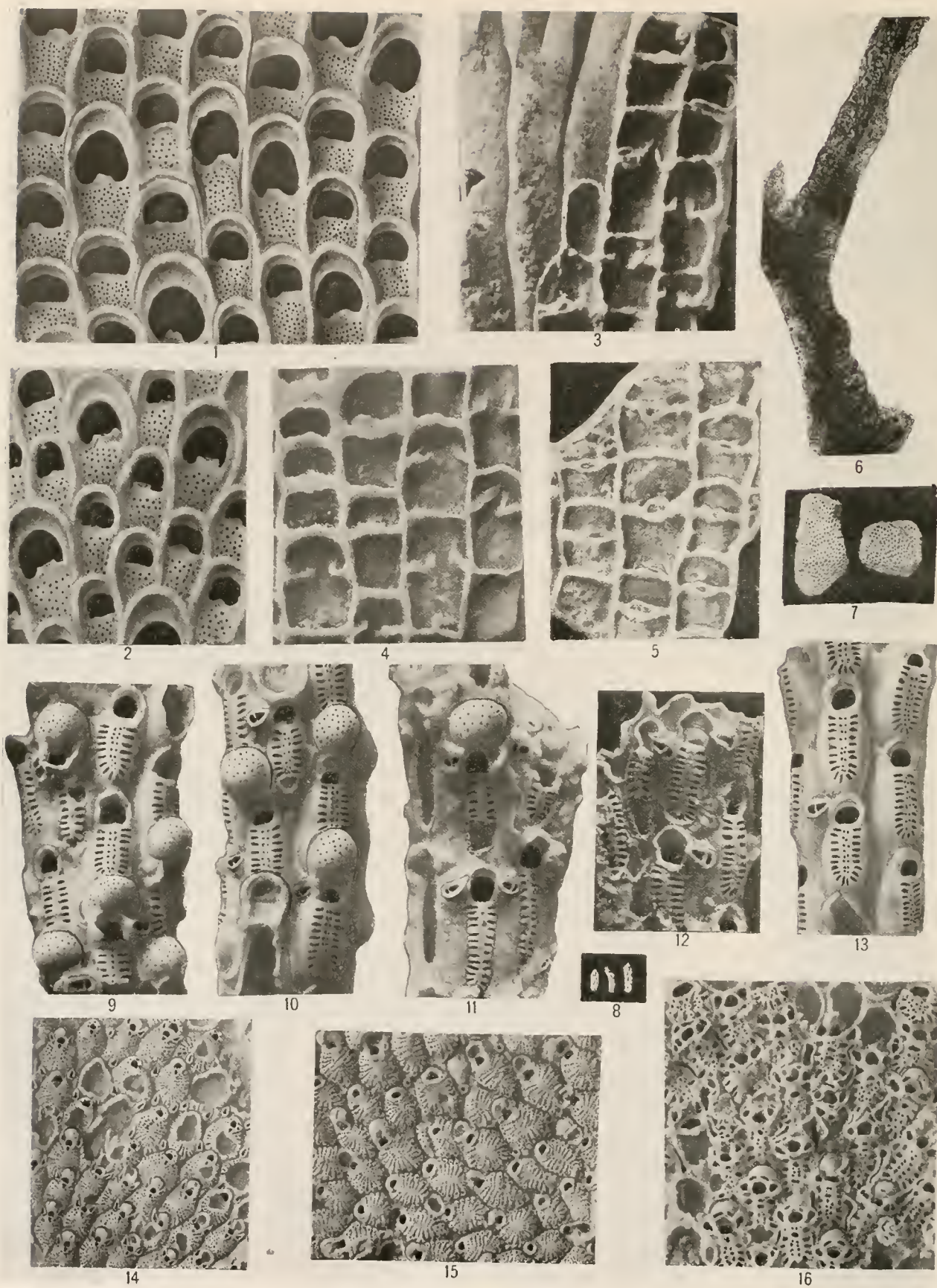


13



12

VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 84.

FIGS. 1-7. *Steganoporella ricksburgica*, new species (p. 264).

1. Surface of the bifoliate zoarium, $\times 20$, illustrating characters of the smaller *a* zooecia with inconspicuous polypidial tube and opesiules and of the larger *B* zooecia in which polypidial tube is quite prominent.
2. Another view of the surface, $\times 20$.
- 3, 4. Two fragments, $\times 20$, with the zoarial surface rubbed away to show the remains of the polypidial tube at different levels.
5. Preparation, $\times 20$, obtained by gentle rubbing away the surface of the zoarium, thus exhibiting the complete polypidial tube.
6. Microstructure of the mural rim, $\times 100$. The elements of the oöcyte composing the rim are grouped in radial rows about the opesium.
7. Two fragmentary zoaria, natural size.

Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.

Cat. No. 64257, U.S.N.M.

FIGS. 8-13. *Membraniporella ? subagassizi*, new species (p. 289).

8. A group of zoaria, natural size.
9. Portion of zoarium, $\times 20$, showing the arch above the aperture of the ovicelled zooecia.
10. Zoarium, $\times 20$, with both ovicelled and nonovicelled zooecia. The structure of the hyperstomial ovicell is illustrated.
11. Fragment of an old zoarium, $\times 20$, with the cribriform areas separated by a thick mural rim.
12. Zooecia, $\times 20$, in which the small lacuna is not present. The avicularia are very salient and the upper zooecium has a calcareous operculum.
13. Zoarium, $\times 20$, composed of zooecia without ovicells.

Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 64258, U.S.N.M.

FIG. 14. *Pucllina simulator*, new species (see also pl. 41, fig. 21) (p. 298).

Surface of the incrusting zoarium, $\times 25$, showing the two oral avicularia to each ovicelled zooecium.

Vicksburgian (Marianna limestone): Near Claiborne, Monroe County, Alabama.

Cat. No. 64259, U.S.N.M.

FIG. 15. *Pucllina inornata*, new species (p. 299).

The incrusting zoarium, $\times 25$, showing the absence of avicularia.

Vicksburgian (Marianna limestone): Murder Creek east of Castlebury, Conecuh County, Alabama.

Cat. No. 64260, U.S.N.M.

FIG. 16. *Gephyrotes spectabilis*, new species (p. 303).

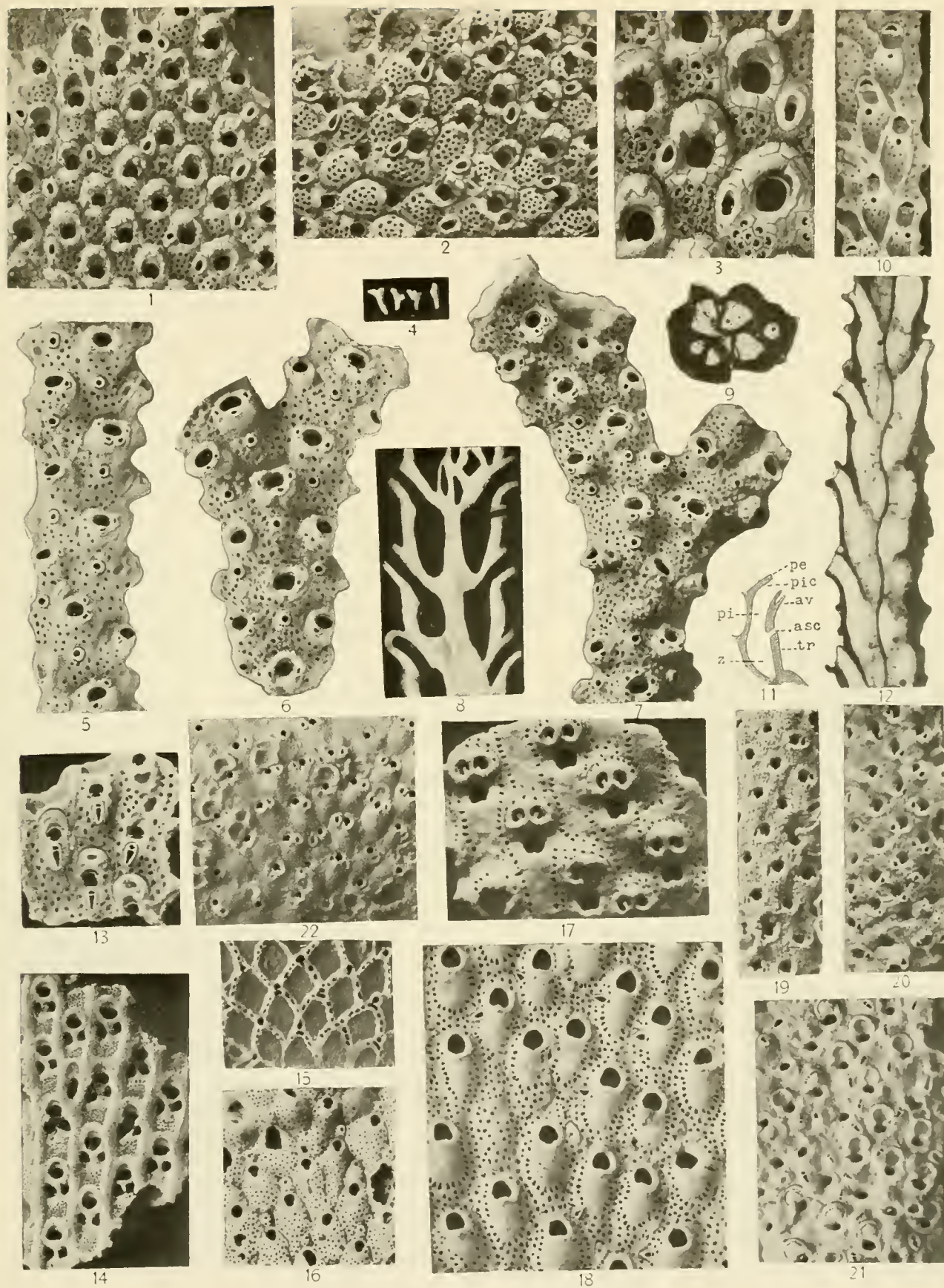
The incrusting zoarium of this unique species, $\times 20$. The large irregular inter-zooecial cavities, the spiramen and the two prominent oral avicularia are to be noted.

Vicksburgian (Byram marl): Byram, Mississippi.

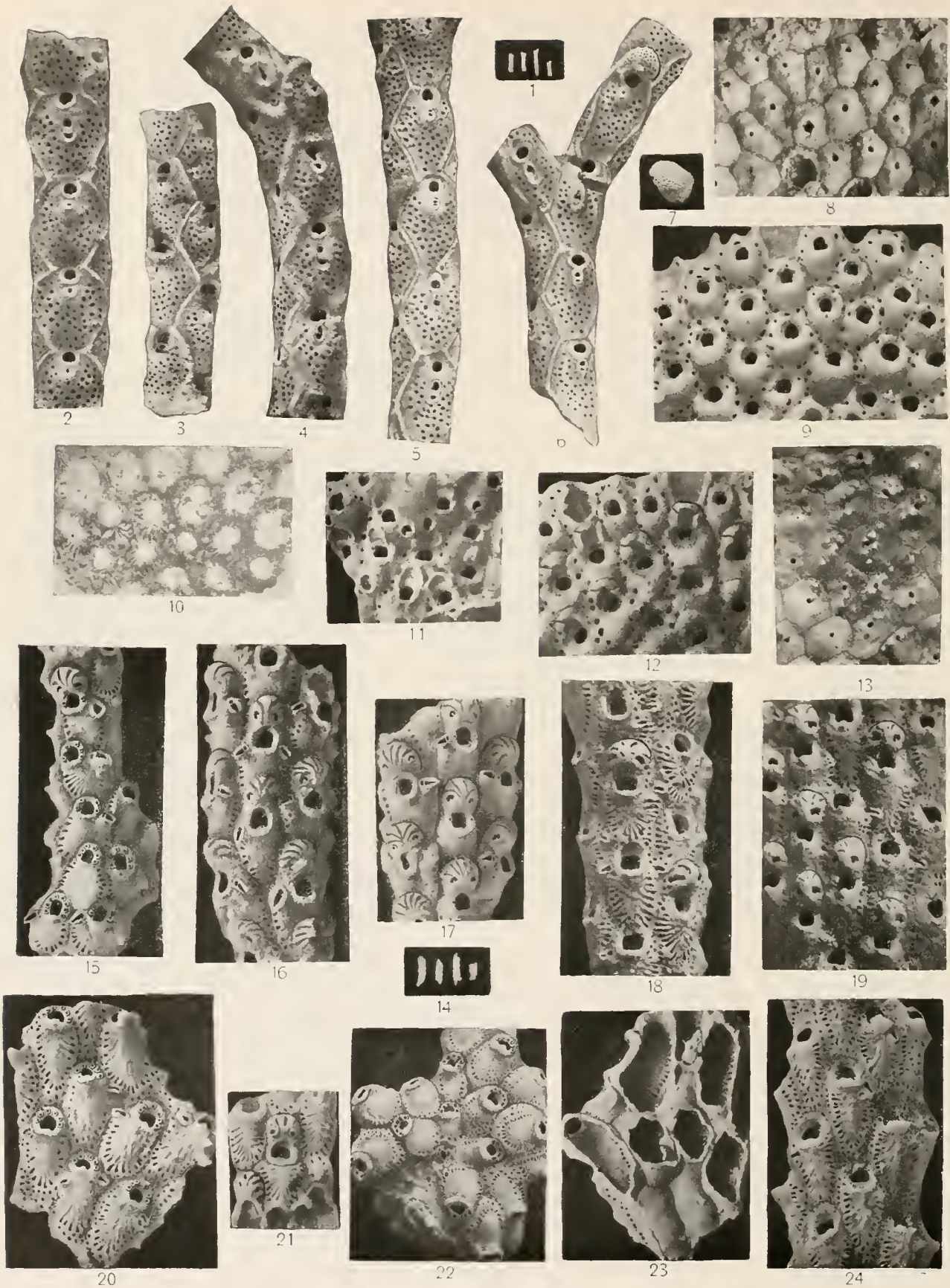
Cat. No. 64261, U.S.N.M.

PLATE 85.

- FIGS. 1-3. *Arachnopusia vicksburgica*, new species (p. 311).
 1, 2. Two views of a zoarium incrusting a shell, $\times 20$.
 3. Photograph, $\times 40$, showing the zooecial structure in detail. The polygonal pieces pierced by a semilunate pore composing the frontal and the rectangular plate covering the ovicell are quite visible.
 Vicksburgian (Byram marl): Byram, Mississippi.
 Cat. No. 64262, U.S.N.M.
- FIGS. 4-12. *Acropora saillans*, new species (p. 319).
 4. A group of the free, cylindrical, bifurcated zoaria, natural size.
 5. An unbranched zoarium, $\times 20$. The ascopore is quite large and salient.
 6. A branching zoarium, $\times 20$, with the small avicularia on the peristome and the ascopore well developed.
 7. Bifurcated zoarium, $\times 20$, with all the zooecial characters well developed.
 8. Photograph of a preparation, $\times 20$, obtained by longitudinal section. The ascopore is not symmetrically placed on all the zooecia.
 9. Transverse thin section, $\times 20$.
 10. View of the interior of the zooecia, $\times 20$, seen from the basal side. The ascopore, apertura, and the peristomie as well as the base of the tremopores showing through the thin olocyst, are visible.
 11. Schematic longitudinal section through a zooecium, $\times 20$, illustrating the structure. *asc*, ascopore; *av*, avicularium; *pc*, peristome; *pi*, peristomie; *pic*, peristomice; *tr*, tremocyst; *z*, zooecium.
 12. Longitudinal thin section through the middle of a zoarium, $\times 20$. The chain of median fusiform areas results from the alternation of the zooecia seen in perspective.
 Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.
 Cat. No. 64263, U.S.N.M.
- FIG. 13. *Schizomavella longirostris*, new species (p. 358).
 Surface of the bilamellar zoarium, $\times 20$, with ovicelled zooecia and prominent median avicularium.
 Vicksburgian (Red Bluff member): Red Bluff, Wayne County, Mississippi.
 Cat. No. 64264, U.S.N.M.
- FIG. 14. *Thalamoporella prima*, new species (p. 269).
 The type-specimen, $\times 20$, a fragment of a bilamellar zoarium.
 Uppermost Vicksburgian (Byram marl): Leaf River, Smith County, Mississippi.
 Cat. No. 64265, U.S.N.M.
- FIGS. 15, 16. *Trypostega venusta* Norman, 1864 (p. 330).
 15. An example, $\times 20$, with the frontal removed by abrasion to show the dietellae around the zooecia but none around the zooeciules.
 16. Surface of the incrusting zoarium, $\times 20$, of a specimen identified with this recent species.
 Vicksburgian (Byram marl): Byram, Mississippi.
 Cat. No. 64266, U.S.N.M.
- FIGS. 17, 18. *Hippomenella capitimortis*, new species (p. 384).
 17. Ovicelled zooecia, $\times 20$, showing the characteristic death's head appearance due to the perforations in the ovicell.
 Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.
 Cat. No. 64267, U.S.N.M.
18. Surface of the bilamellar zoarium, $\times 20$.
 Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
 Cat. No. 64268, U.S.N.M.
- FIGS. 19-21. *Stephanosella cutomostoma* Reuss, 1847 (p. 345).
 19. Portion of the incrusting zoarium, $\times 20$, in which the zooecia have small scattered areolae and the accompanying granulations.
 20. Zooecia without ovicell, $\times 20$. The oral avicularium is small and without pivot. The ancestrula is an ordinary zooecium; the avicularia are without pivot.
 21. Ovicelled zooecia, $\times 20$. The avicularia are frontal instead of oral, and olocyst forms the zooecial frontal and the ovicells are marked by a crownlike border. The avicularia have a pivot.
 Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
 Cat. No. 64269, U.S.N.M.
- FIG. 22. *Stephanosella parvipora*, new species (p. 344).
 Surface of the incrusting zoarium, $\times 20$, showing the small dimensions.
 Vicksburgian ("Chimney rock" of Marianna limestone): Three miles southeast of Vosburg, Jasper County, Mississippi.
 Cat. No. 64270, U.S.N.M.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 86.

FIGS. 1-6. *Schizomarella arborea*, new species (p. 357).

1. Fragments of the rodlike zoarium, natural size.
2. Four-sided zoarium, $\times 20$, with rectangular sides and small avicularia.
3. Profile view of small fragment, $\times 20$.
4. A rounded fragment, $\times 20$, with small avicularia.
5. Another rounded zoarium, $\times 20$, exhibiting variations in length of the elliptical avicularium.
6. Branching zoarium, $\times 20$, with the salient punctate ovicell preserved on the uppermost zooecium.

Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 64271, U.S.N.M.

FIGS. 7-13. *Hippoporella perforata*, new species (p. 378).

7. The free, orbicular zoarium, natural size.
8. Lower face of zoarium, $\times 20$, showing perforations, probably for radical fibers.
9. Ordinary zooecia, $\times 20$, with areolae frequently occurring above the aperture.
10. Tangential thin section, $\times 20$, showing olocystal elements of frontal wall radiating from the aperture toward the areolae.
11. Zooecia at the center of the zoarial surface, $\times 20$. These zooecia are erect and have large auriculated vibracula.
12. Ovicelled zooecia, $\times 20$. The ovicell is formed of three closely arranged calcareous pieces.
13. Zoarium, $\times 20$, showing hydrostatic tuberosities accompanying the perforations of the lower face.

Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 64272, U.S.N.M.

FIGS. 14-19. *Hippomenella costulata*, new species (p. 385).

14. Group of the more or less cylindrical free zoaria, natural size.
15. Zoarium, $\times 20$, in which the interareolar costules are little developed.
16. Ovicelled zooecia, $\times 20$, showing the two perforations and the costules on the ovicell.
17. Ovicelled zooecia, $\times 20$, with transverse avicularia.
18. Zoarium, $\times 20$, in which the interareolar costules are strongly developed.
19. Portion of zoarium, $\times 20$, with more than the usual six rows of zooecia.

Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 64273, U.S.N.M.

FIGS. 20-24. *Hippomenella transversora*, new species (p. 388).

20. Fragment of the unilamellar zoarium, $\times 20$, illustrating the salient proximal mucro of the aperture and the transverse avicularia.
21. Ovicelled zooecia, $\times 20$, showing resemblances to *Hippomenella costulata*.
22. Zooecia about the ancestrula, $\times 20$. The latter is the small oval zooecium at the center of the figure.
23. Basal side of a zoarium, $\times 20$, with some zooecia broken so as to show the interior.
24. Zoarium with a broad salient mucro on some of the zooecia $\times 20$.

Vicksburgian (Marianna limestone): West bank of Conecuh River, Escambia County, Alabama, and Murder Creek, east of Castlebury, Conecuh County, Alabama (fig. 23).

Cat. Nos. 64274, 64275, U.S.N.M.

FIGS. 1-4. *Hippomucella pungens*, new species (p. 388).

1. Surface of the unilamellar zoarium, $\times 20$, illustrating characters of the ordinary zooecia.
2. Basal side of zooecia, $\times 20$, exhibiting the hydrostatic tuberosities.
3. Another zoarium, $\times 20$, with some ovicelled zooecia.
4. Several zooecia, $\times 20$ showing the frontal to be formed of a thin pleurocyst containing the areolae and of an underlying smooth olocyst.

Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 64276, U.S.N.M.

FIGS. 5, 6. *Hippodiplosia baccata*, new species (p. 397).

5. Surface of a zoarium, $\times 20$, incrusting a shell. The short zooecia, small avicularium and pearl like tuberosities of the frontal are characteristic features.
6. Ovicelled zooecia, $\times 20$. The tremopores are more visible in this specimen.

Vicksburgian (Byram marl): Byram, Mississippi.

Cat. No. 64277, U.S.N.M.

FIGS. 7-9. *Hippodiplosia magniporosa*, new species (p. 396).

7. Young zooecia, $\times 20$, with their peristome.

Vicksburgian (Red Bluff member): Seven and a half miles southeast of Bladen Springs, Alabama.

Cat. No. 64278, U.S.N.M.

8. Surface of the hollow, cylindrical zoarium, $\times 20$, illustrating the normal characters of the zooecia.

9. Zooecia, $\times 20$, showing tremocyst detached from olocyst.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 64279, U.S.N.M.

FIGS. 10-13. *Hippodiplosia strangulata*, new species (p. 397).

10. Surface of the unilamellar zoarium, $\times 20$, showing narrow zooecia.

11. Another example, $\times 20$, with broad zooecia.

12. A zoarium, $\times 20$, in which the zooecia are bordered by a salient line.

Vicksburgian (Marianna limestone): Murder Creek, east of Castlebury, Conecuh County, Alabama.

Cat. No. 64280, U.S.N.M.

13. Ovicelled zooecia, $\times 20$.

Vicksburgian (Byram marl): Byram, Mississippi.

Cat. No. 64281, U.S.N.M.

FIG. 14. *Peristomella coccinea resupinata* Manzoni, 1875 (p. 412).

Portion of a free, erect zoarium, $\times 20$. The elongated tubular part below the external aperture is well shown on this specimen.

Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 64282, U.S.N.M.

FIG. 15. *Cyclicopora colum*, new species (p. 425).

The incrusting type-specimen, $\times 20$. The large tremopores and the simple elliptical avicularium arising from a lateral tremopore are shown. Several ovicelled zooecia are present.

Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 64283, U.S.N.M.

FIGS. 16, 17. *Peristomella erecta*, new species (p. 413).

16. A young example of this species, $\times 20$. The interareolar costules and the longitudinally arranged avicularia are well shown.

17. An older example, $\times 20$, in which the zooecial frontal is covered by the granular deposit of the pleurocyst.

Vicksburgian (Marianna limestone): Near Claiborne, Monroe County, Alabama.

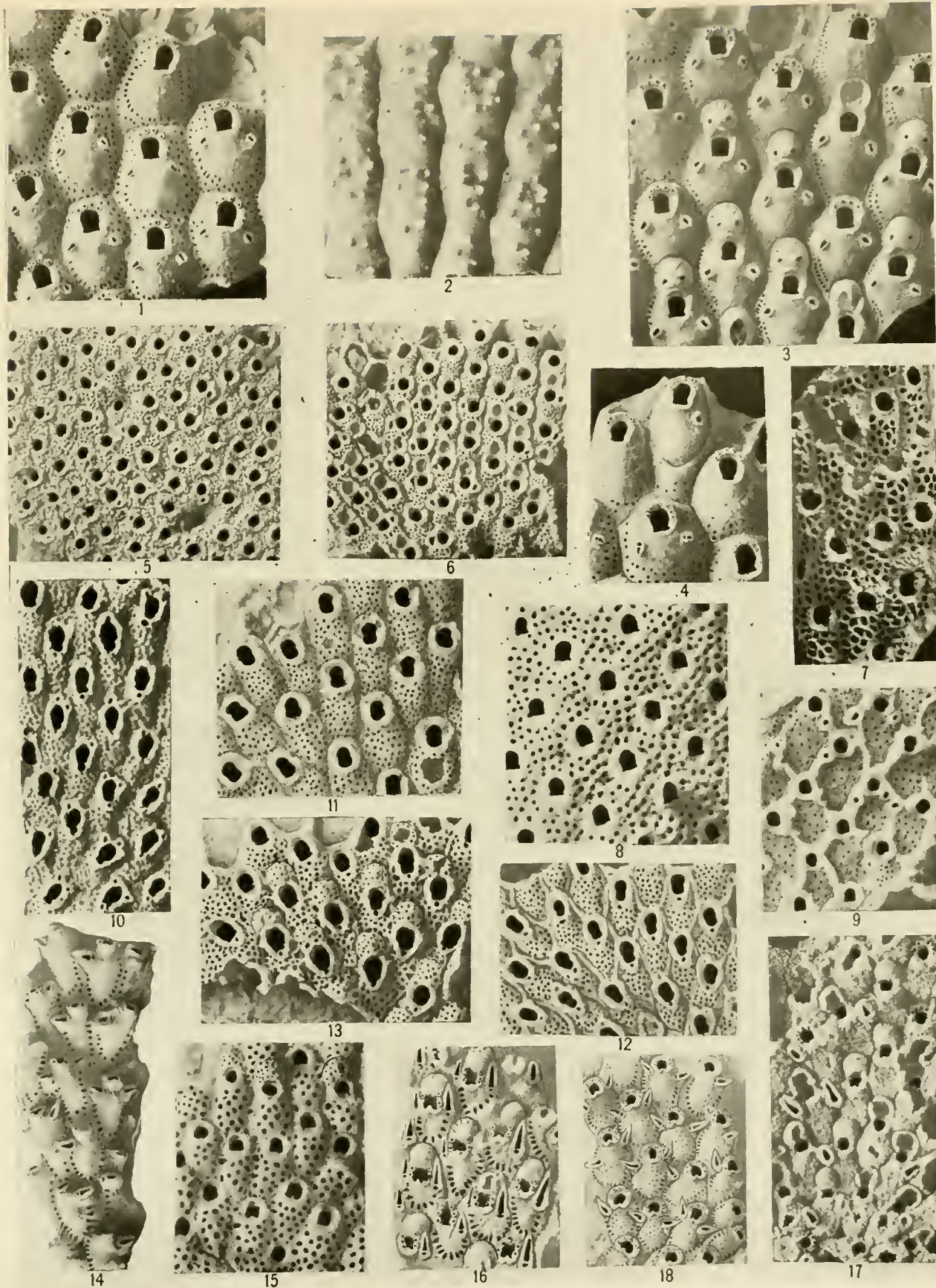
Cat. No. 64284, U.S.N.M.

FIG. 18. *Peristomella coccinea* Abildgaard, (p. 409).

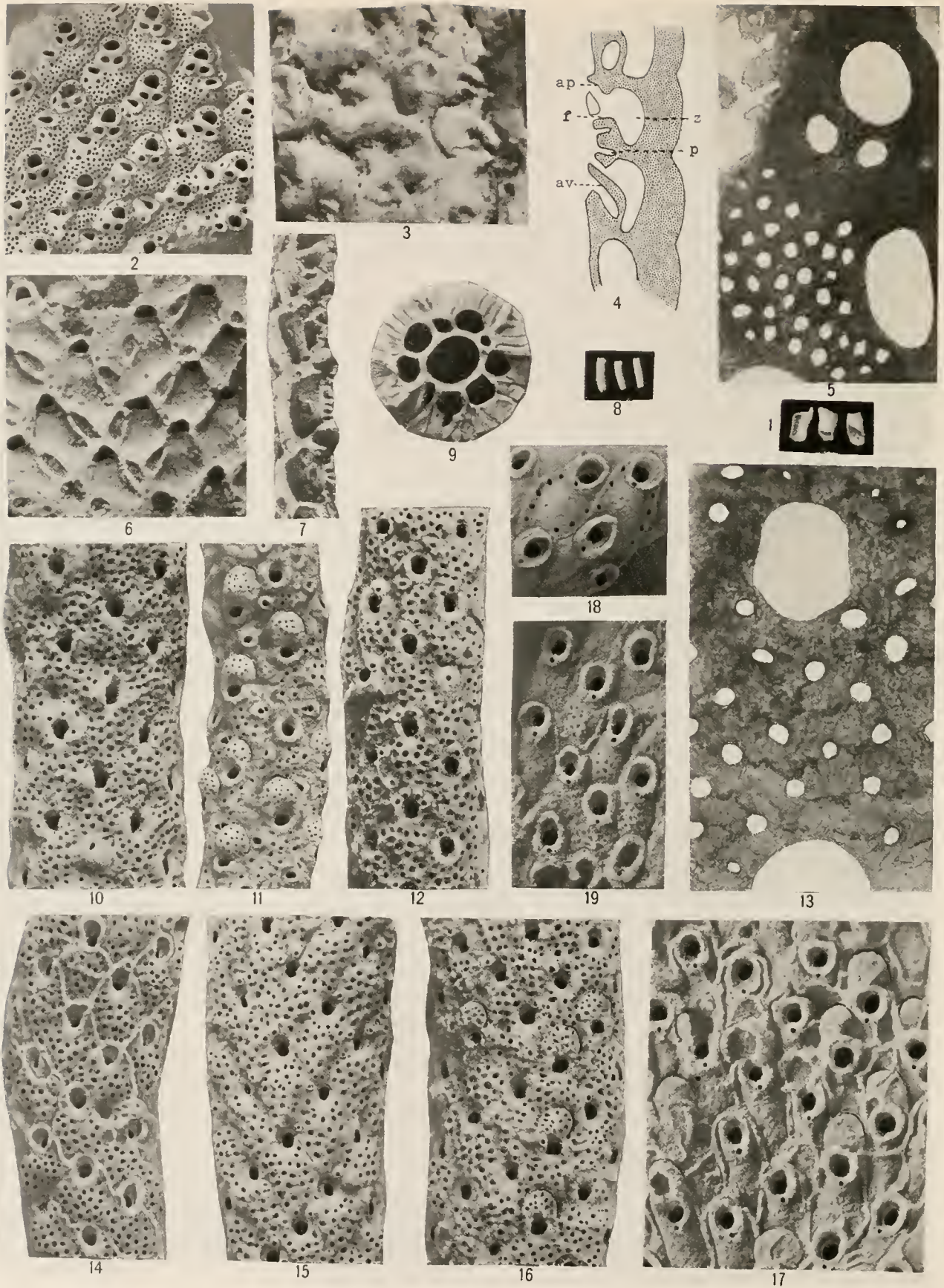
Surface of the incrusting zoarium, $\times 20$. The small mucro on the peristome, the spines and the two large oblique avicularia, are characteristic of the species.

Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.

Cat. No. 64285, U.S.N.M.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 88.

FIGS. 1-7. *Didymosella crassa* Camu and Bassler, 1917 (p. 416).

1. Three of the unilamellar zoaria which by growth about algae have assumed a cylindrical form; natural size.
2. Surface of a zoarium, $\times 20$, showing the bottle shaped zooecia with tremocystal frontal, two large pores opening into the zooecium and the triangular marginal avicularium.
3. Basal side of a zoarium, $\times 20$, exhibiting the characteristic markings.
4. Sketch of longitudinal section, $\times 25$, illustrating the structure of this species.
 ap , apertura; av , avicularian cavity; f , very large frontal pore; p , smaller pores (tremopores); z , zooecium.
5. Tangential thin section, $\times 100$. The aperture with the two large pores just below it, the tremopores and finally the very large avicularian cavity are visible.
6. View of the interior of the zooecial frontal, $\times 20$, illustrating the very large avicularia.
7. Longitudinal edge view of zooecia, $\times 20$, showing the same features as in figure 4.
 Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
 Cat. No. 62592, U.S.N.M.

FIGS. 8-16. *Cyclicopora spongiopsis* De Gregorio, 1899 (p. 426).

8. Three small specimens, natural size, of the hollow stemmed unilamellar zoarium.
9. Transverse section, $\times 20$, showing the thick walls of both the frontal and the tubules.
10. An old example, with a calcified zooecium, $\times 20$.
11. Zoarium, with some ovicelled zooecia and triangular avicularia with pivot, $\times 20$.
12. An example in which the zooecia develop one to four peristomial avicularia, $\times 20$.
13. Tangential thin section, $\times 100$. The large tremopores and the dark sinuous lines of intersection with the olocyst are visible.
14. A zoarium, $\times 20$, with the zooecia outlined by a prominent thread.
15. Another specimen, $\times 20$, in which usually only one peristomial avicularium is developed.
16. Part of a zoarium, $\times 20$, exhibiting five ovicelled zooecia.
 Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.
 Cat. No. 64286, U.S.N.M.

FIGS. 17-19. *Cyclicopora filifera*, new species (p. 427).

17. Surface of the incrusting zoarium, $\times 20$, with ovicelled zooecia. Many of the ovicells are broken. The tremocyst is here replaced by a thick pleurocyst.
18. Several zooecia, $\times 20$, of a specimen with well defined separating lines.
19. Well preserved example, $\times 20$, with the tremopores visible and the apertura placed at the bottom of the peristomie.
 Vicksburgian (Marianna limestone): Near Claiborne, Monroe County (figs. 17, 19), and west bank of Conecuh River, Escambia County, Alabama (fig. 18).
 Cat. Nos. 64287, 64288, U.S.N.M.

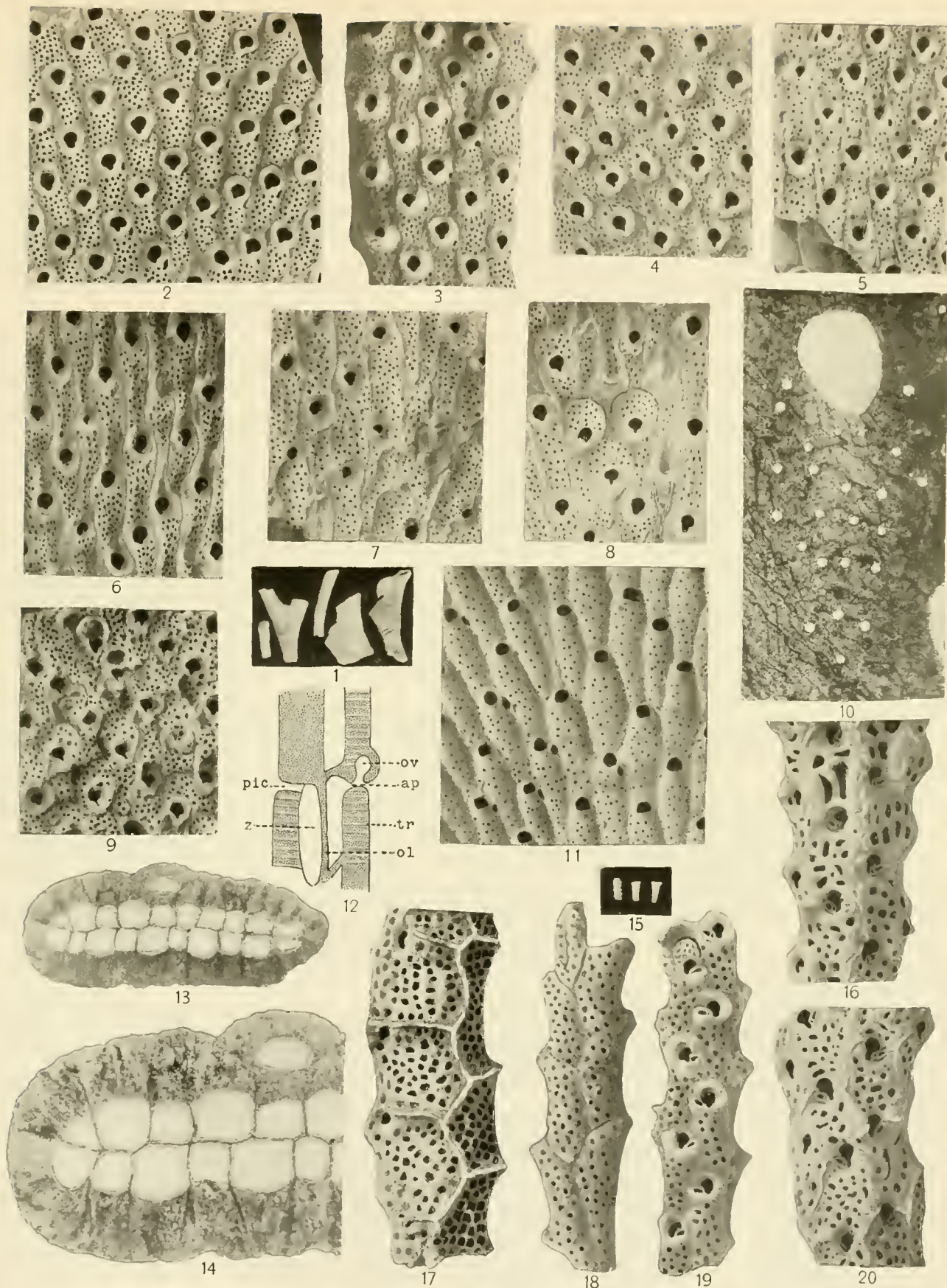
PLATE 89.

FIGS. 1-14. *Stomachetosella crassicollis* Camu and Bassler, 1917 (p. 433).

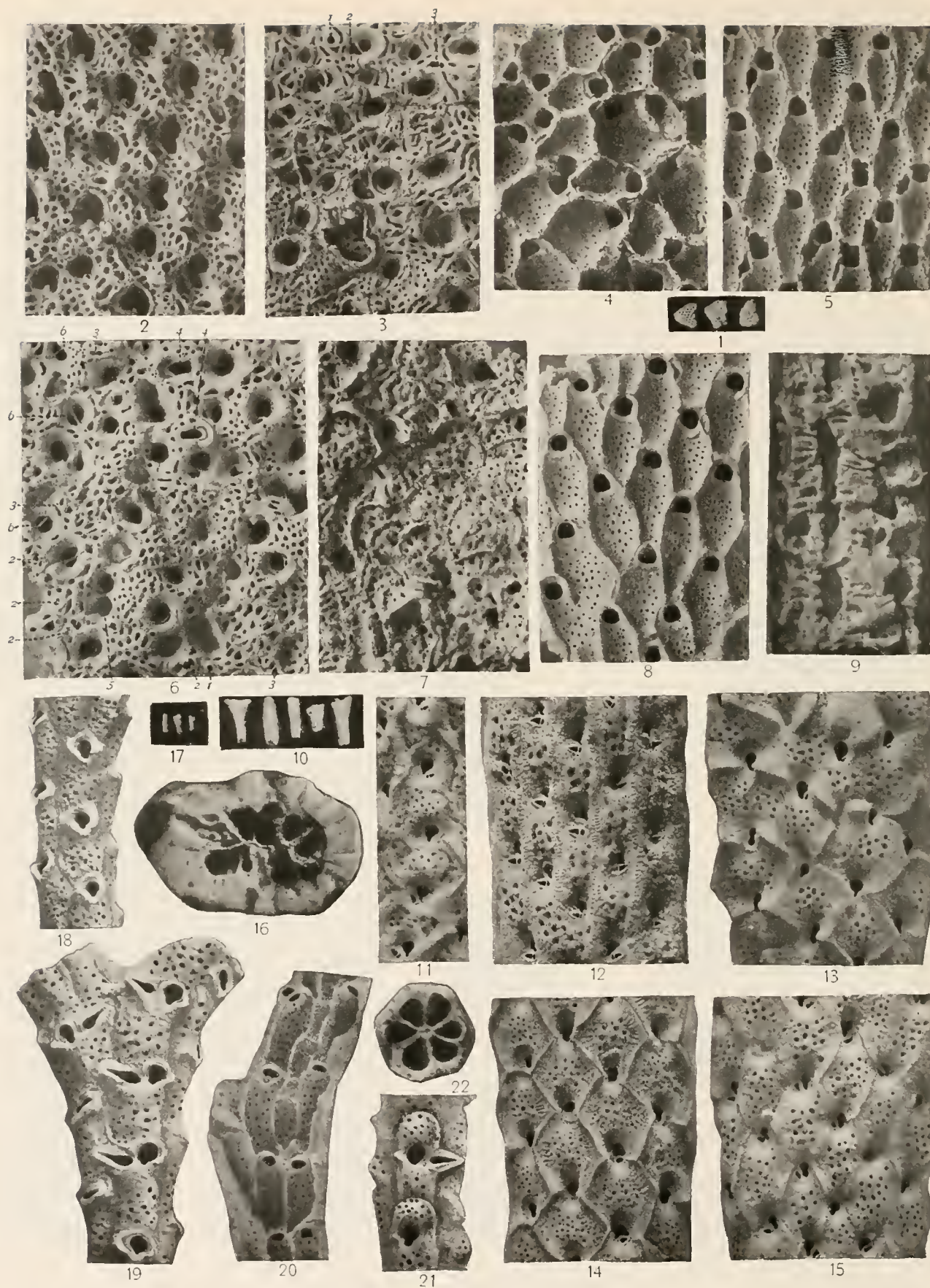
1. Fragments of the bifoliate zoarial fronds, natural size.
 2. Portion of a broad zoarium. $\times 20$, exhibiting the usual characters of the zooecia without ovicells.
 3. A narrow zoarium, $\times 20$, showing the tremopores of constant size.
 4. Zooecia, $\times 20$, with well developed rimule spiramen and zooecial outlines little distinct.
 5. Surface of an old zoarium, $\times 20$, with the zooecia separated by a distinct thread and the anterior projection of the peristome little conspicuous.
 6. Another surface, $\times 20$, with the peristome more reduced.
 7. Old zooecia, $\times 20$, with peristomes almost wanting. The olocyst and tremocyst are visible.
 8. Surface of zoarium with ovicelled zooecia, $\times 20$. The tremopores are inconspicuous on account of fossilization and the peristome is not salient.
 9. A normal zoarium with ovicelled zooecia, $\times 20$.
 10. Tangential thin section, $\times 100$, passing through the olocyst and showing the beginning of the tremopores.
 11. View of the interior of the zooecial frontal, $\times 20$. The zooecial and avicularian cavities and the small beginnings of the tremopores are visible.
 12. Drawing of longitudinal section, $\times 20$, showing the apertura (*ap*), olocyst (*ol*), ovicell (*ov*), peristomie (*pic*), tremopores (*tr*), and zooecium (*z*). The walls are very thick.
 - 13, 14. Transverse thin section, $\times 20$, and a portion of the same, $\times 50$, illustrating the thick zooecial walls of which there is a special one for each zooecium.
- Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 62593, U.S.N.M.

FIGS. 15-20. *Enoplostomella magniporosa*, new species (p. 439).

15. Fragments of the free bifurcating zoarium, natural size.
 16. Zooecia, $\times 20$, with tremopores coalesced, giving an unusual appearance.
 17. Dorsal side of mature zoarium, $\times 20$. The zooecia are separated by sharp ridges and are provided with large tremopores.
 18. Dorsal of a young specimen, $\times 20$.
 19. Frontal side of the same specimen, $\times 20$, with one ovicelled zooecium.
 20. Normal zooecia, $\times 20$. The wide rounded rimule spiramen, the oral avicularium almost within the peristomie and the very large tremopores are to be noted.
- Vicksburgian (Byram marl): Byram, Mississippi.
Cat. No. 64289, U.S.N.M.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 90.

FIGS. 1-9. *Enoplostomella synthetica*, new species (p. 434).

1. Three fragments, natural size, of the bifoliate zoarium.
 2. Surface of a zoarium. $\times 20$, showing normal characters of the zooecia. A broken ovicell is seen in the left-hand portion, and a complete one in the lower part of the same side. The rimule spiramen and the avicularium in the peristomie are visible.
 3. Zoarial surface, $\times 20$, illustrating the irregularity due to the transformation of the tubules. Three different forms of avicularia may be noted.
 4. An interior of the zooecial frontal, $\times 20$, with avicularian cavities exhibited.
 5. Another interior, $\times 20$, showing oriented zooecia and tubules perforating the olocyst.
 6. A zoarial surface, $\times 20$, with zooecia unoriented and exhibiting small, simple avicularia (1), small avicularium with denticles (2), with pivot (3), large avicularia with area (4) and without area (5), and large avicularia with pivot (6).
 7. A surface, $\times 20$, showing an extreme development of the tubules closing the apertures.
 8. Interior of frontal, $\times 20$, of specimen figured in number 7, illustrating the simplicity of structure.
 9. Longitudinal fracture through zoarium, $\times 20$.
- Vicksburgian (Byram marl): Byram, Mississippi.
Cat. No. 64290, U.S.N.M.

FIGS. 10-16. *Enoplostomella rhomboidalis*, new species (p. 436).

10. A group of the cylindrical, bifoliate zoaria, natural size.
 11. Surface of a zoarium, $\times 20$, with two zooecia exhibiting ovicells.
 12. Zoarium, $\times 20$, with well defined triangular avicularia and with the line separating the zooecia much thickened.
 13. Zooecia, $\times 20$, with the separating ridges thickened only near the aperture.
 14. Another zoarium, $\times 20$, with broad zooecia and salient separating ridges.
 15. Zoarium with narrow zooecia, $\times 20$.
 16. Transverse feature, $\times 20$, illustrating bifoliate character of zoarium.
- Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 64291, U.S.N.M.

FIGS. 17-22. *Enoplostomella ligulifera*, new species (p. 437).

17. Three fragments, natural size, of the free, cylindrical zoarium.
 18. Another specimen, $\times 20$, with the rimule spiramen well developed and the avicularia wanting.
 19. Surface of a zoarium, $\times 20$, showing the long avicularia and the lateral tongue like processes of the peristomie.
 20. Interior of zooecial frontal, $\times 20$, exhibiting the small scattered pores of the olocyst.
 21. Two zooecia with ovicells, $\times 20$.
 22. Transverse fractures, $\times 20$, illustrating structure of zoarium.
- Vicksburgian (Red Bluff member): Seven and one-half miles southwest of Bladon Springs, Alabama.

Cat. No. 64292, U.S.N.M.

PLATE 91.

FIGS. 1-11. *Enoplostomella crassimuralis*, new species (p. 435).

1. Three fragments of the hollow, cylindrical zoarium, natural size.
2. Surface of zoarium, $\times 20$, with the zooecia separated by thick, smooth walls.
3. Zooecia of another zoarium, $\times 20$, illustrating the irregularity of the tremopores.
4. Zooecia, $\times 20$, with prominent avicularia.
5. Zooecia, of young portion of zoarium, $\times 20$. The tremopores are here smaller and more regular in size, and the rimule-spiramen and avicularium are quite apparent.
6. Interior of frontal of zooecia, $\times 25$, showing regular arrangement of the zooecia, the avicularian cavity and the olocyst with minute pores.
7. Another interior, $\times 20$, in which the avicularian cavities are not seen.
8. Tangential thin section through the frontal, showing the obscure remains of the tremopores and the fusion of the zooecial walls.
9. Transverse fracture of a zoarium, $\times 20$, showing no special zooecial walls.
10. Transverse thin section of a branch, $\times 20$. The tubules are scarcely visible in the dense structure.
11. Tangential thin section, $\times 20$, below the frontal.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 64293, U.S.N.M.

FIGS. 12-21. *Enoplostomella defixa* Cam and Bassler, 1917 (p. 436).

12. Group of the small, free cylindrical zoaria, natural size.
13. A zoarium, $\times 20$, exhibiting short avicularia.
14. Zooecia, $\times 20$, with small numerous tremopores and well developed avicularia.
15. Ovicelled zooecia, $\times 20$, with salient avicularia.
16. Another zoarium, $\times 20$, in which the avicularium is long and salient. The zooecia are bordered by a salient thread.
17. Portion of a thick zoarium, $\times 20$, with worn avicularia.
18. Another zoarium with worn avicularia and attenuated tremopores, $\times 20$.
19. Transverse fracture of a branch, $\times 20$.
20. Interior of frontal of zooecia, $\times 20$.
21. Tangential thin section through the frontal, $\times 100$. The lateral tremopores only are seen, while between them the section cuts the olocyst.

Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

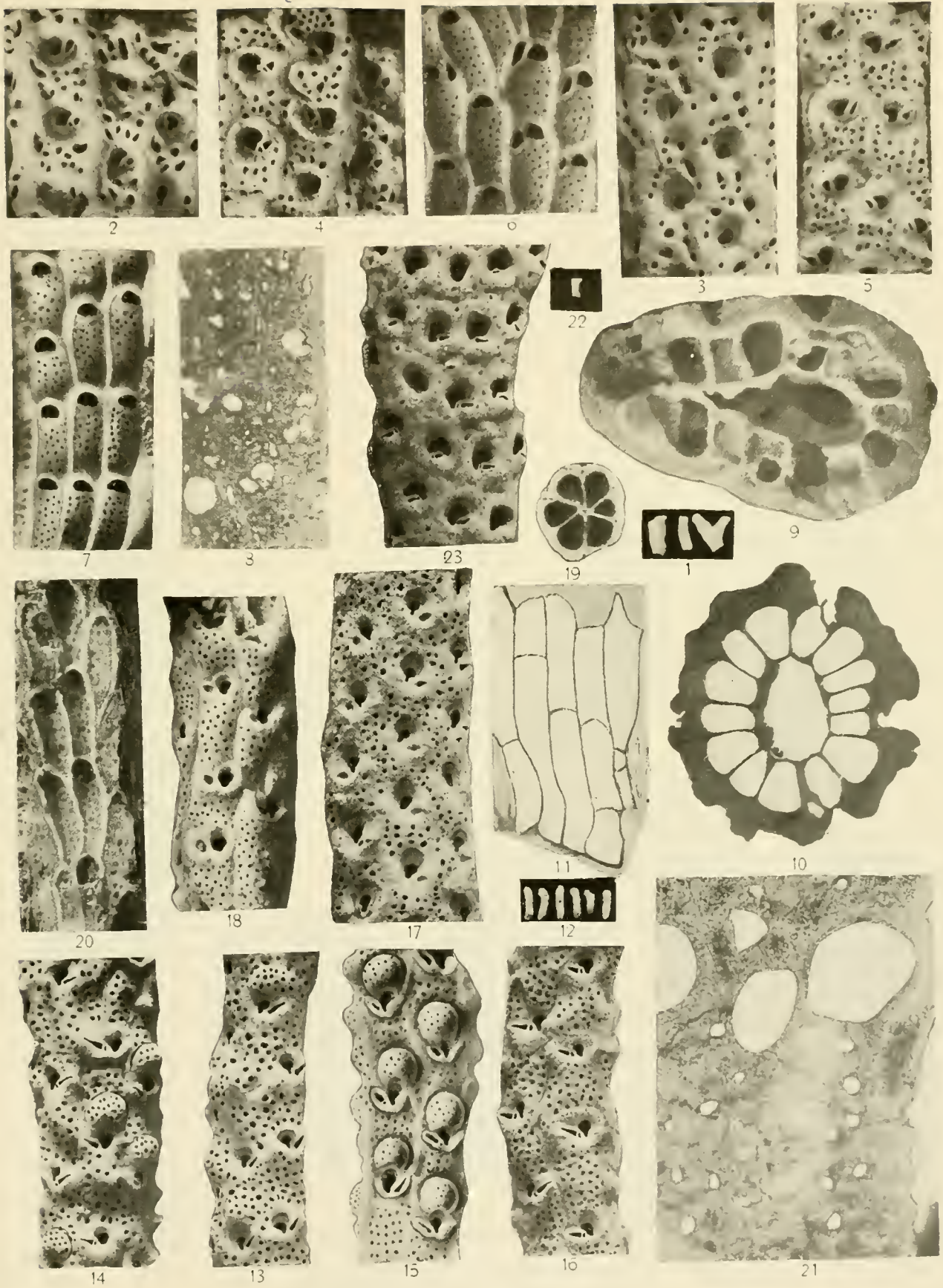
Cat. No. 62594, U.S.N.M.

FIGS. 22, 23. *Leiosella orbicularia*, new species (p. 450).

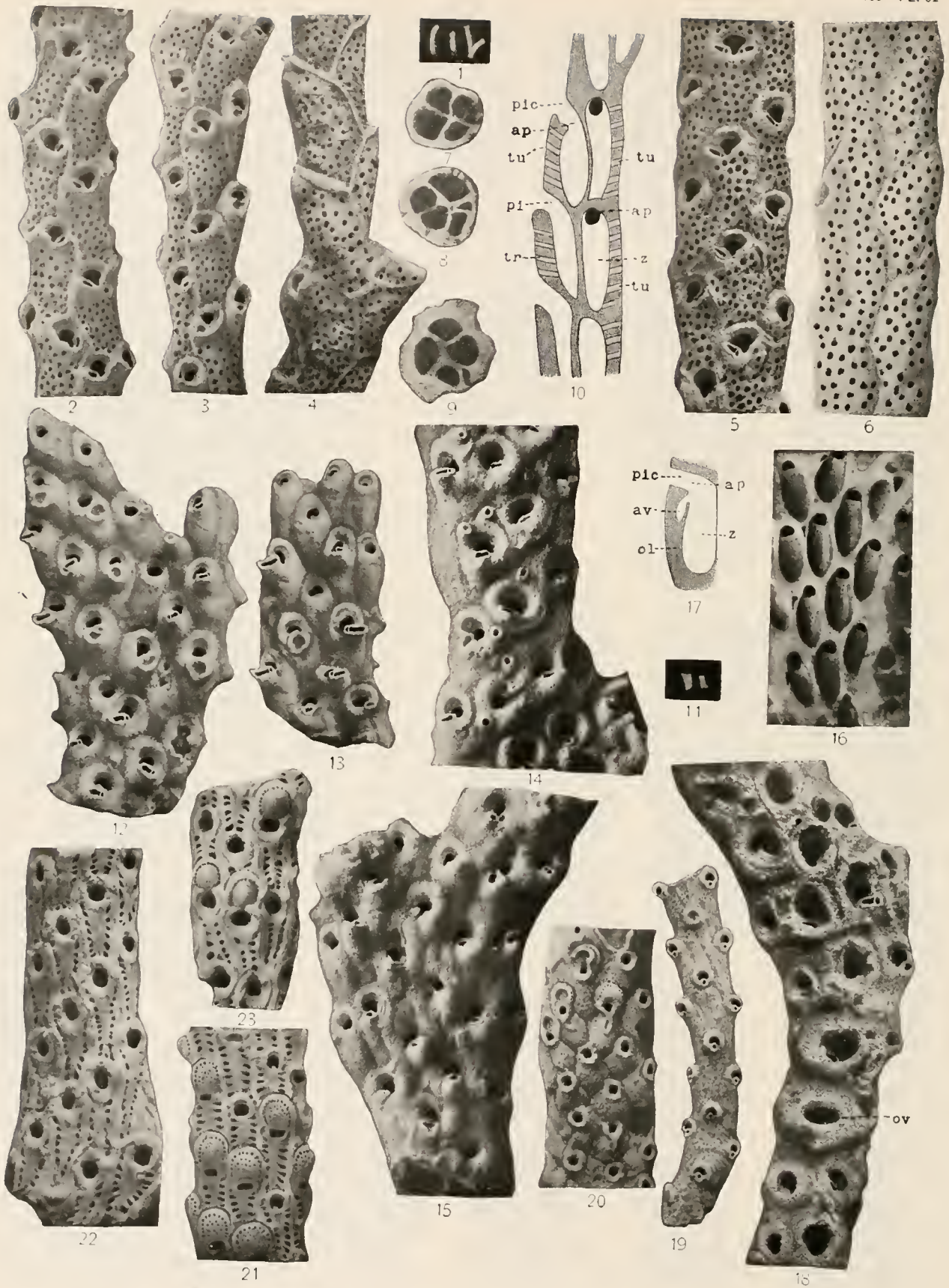
22. Fragment of the free, cylindrical bifoliate zoarium, natural size.
23. Surface of the same specimen, $\times 20$. The frontal is a smooth, thick olocyst, the pores exhibited being small frontal avicularia.

Vicksburgian (Red Bluff member): Red Bluff, Wayne County, Mississippi.

Cat. No. 64294, U.S.N.M.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 92.

FIGS. 1-10. *Enoplostomella vallata*, new species (p. 438).

1. Three fragments of zoaria, natural size.
 2. Frontal of zooecia, $\times 20$. The rimule-spiramen and avicularium are clearly shown.
 3. Another zoarium, $\times 20$.
 4. Dorsal side of a bifurcated fragment, $\times 20$. The characteristic ridges bounding the zooecia and the tremopores are plainly visible.
 - 5, 6. Frontal and dorsal sides of the old zoarium, $\times 20$, in which the ridges bounding the zooecia are wanting.
 - 7-9. Three views, $\times 20$, of transverse sections.
 10. Sketch, $\times 20$, showing structure of zoarium. *ap*, apertura; *pi*, peristomie; *pic*, peristomice; *tr*, tremocyst; *tu*, tubules; *z*, zooecium.
- Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64295, U.S.N.M.

FIGS. 11-17. *Lciosella rostrifera* Canu and Bassler, 1917 (p. 449).

11. Two fragments of the free bilamellar zoarium natural size.
 12. View of a fragment, $\times 20$, showing the olocystal frontal, the rimule-spiramen, and the oral avicularium.
 13. Another example, $\times 20$, in which several of the avicularia are broken.
 14. Portion of a zoarium, $\times 20$, with some of the avicularia embedded in the olocyst. The small rounded pores are frontal avicularia.
 15. Surface of another fragment, $\times 20$, in which the oral avicularia are still more embedded and the frontal avicularia are wanting.
 16. Interior of the zooecial frontal, $\times 20$, illustrating structure.
 17. Sketch of a longitudinal section through a zooecium. *ap*, apertura; *av*, avicularium; *ol*, olocyst; *pic*, peristomice; *z*, zooecium.
- Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.
Cat. No. 62597, U.S.N.M.

FIG. 18. *Lciosella grandisora*, new species (p. 449).

- The type-specimen, $\times 20$, exhibiting the large size of the zooecia, the oral avicularia, and ovicell (*ov*).
- Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.
Cat. No. 64296, U.S.N.M.

FIGS. 19, 20. *Smittina granulosa*, new species (p. 468).

19. A fragment of a cylindrical zoarium, $\times 20$, showing the granulose surface and the median avicularium.
- Vicksburgian: West bank of Conecuh River, Escambia County, Alabama.
20. Portion of another zoarium with ovicelled zooecia, $\times 20$.
- Vicksburgian (Marianna limestone): Deep well, Escambia County, Alabama.
Cat. No. 64297, U.S.N.M.

FIGS. 21-23. *Smittina cophia*, new species (p. 465).

21. Fragment of a young, hollow, cylindrical zoarium, $\times 20$, exhibiting ovicelled zooecia and the small lyrula.
 22. Surface of an older example, $\times 20$, without ovicells.
 23. An old example, $\times 20$, with the ovicells somewhat immersed.
- Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64298, U.S.N.M.

PLATE 93

FIGS. 1-9. *Smittina tetum*, new species (p. 468).

1. Group of the free, cylindrical, hollow zoaria, natural size.
2. A zoarium, $\times 20$, showing the salient lips of the peristome.
3. Another zoarium, $\times 20$, in which these lips are wanting and the zooecia are separated by thick walls. The avicularia are small.
4. Zooecia, $\times 20$, with large median avicularia and several broken ovicells.
5. Another aspect of the zooecial surface, $\times 20$, with large oral tubercles.
6. Ovicelled zooecia, $\times 20$, with enormous avicularia.
7. Another specimen with ovicelled zooecia, $\times 20$. The ovicells are granulose.
8. Interior of the frontal, $\times 20$, showing the olocyst perforated by areolae.
9. Tangential thin section through the frontal of a zooecium $\times 100$.
Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 64299, U.S.N.M.

FIGS. 10-16. *Smittina ampla*, new species (p. 466).

10. Several fragments of the bilamellar zoarium, natural size.
11. Several zooecia, $\times 25$, with spines, avicularia, and lyrula.
12. Another zoarium, $\times 20$, with several ovicelled zooecia, the ovicells broken.
13. Surface of a zoarium, $\times 20$, showing zooecia with lyrula, small, salient, oral avicularium and large lateral avicularium with spatulate beaks.
14. Interior of the frontal, $\times 20$, illustrating the structure of the olocyst and pleurocyst.
15. Zooecia, $\times 20$, one preserving a carinated ovicell.
16. Vertical section, $\times 20$, illustrating the apertura oblique on the zooecial plane.
ap., apertura; *m.*, mucro; *pic.*, peristomice; *z.*, zooecium.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

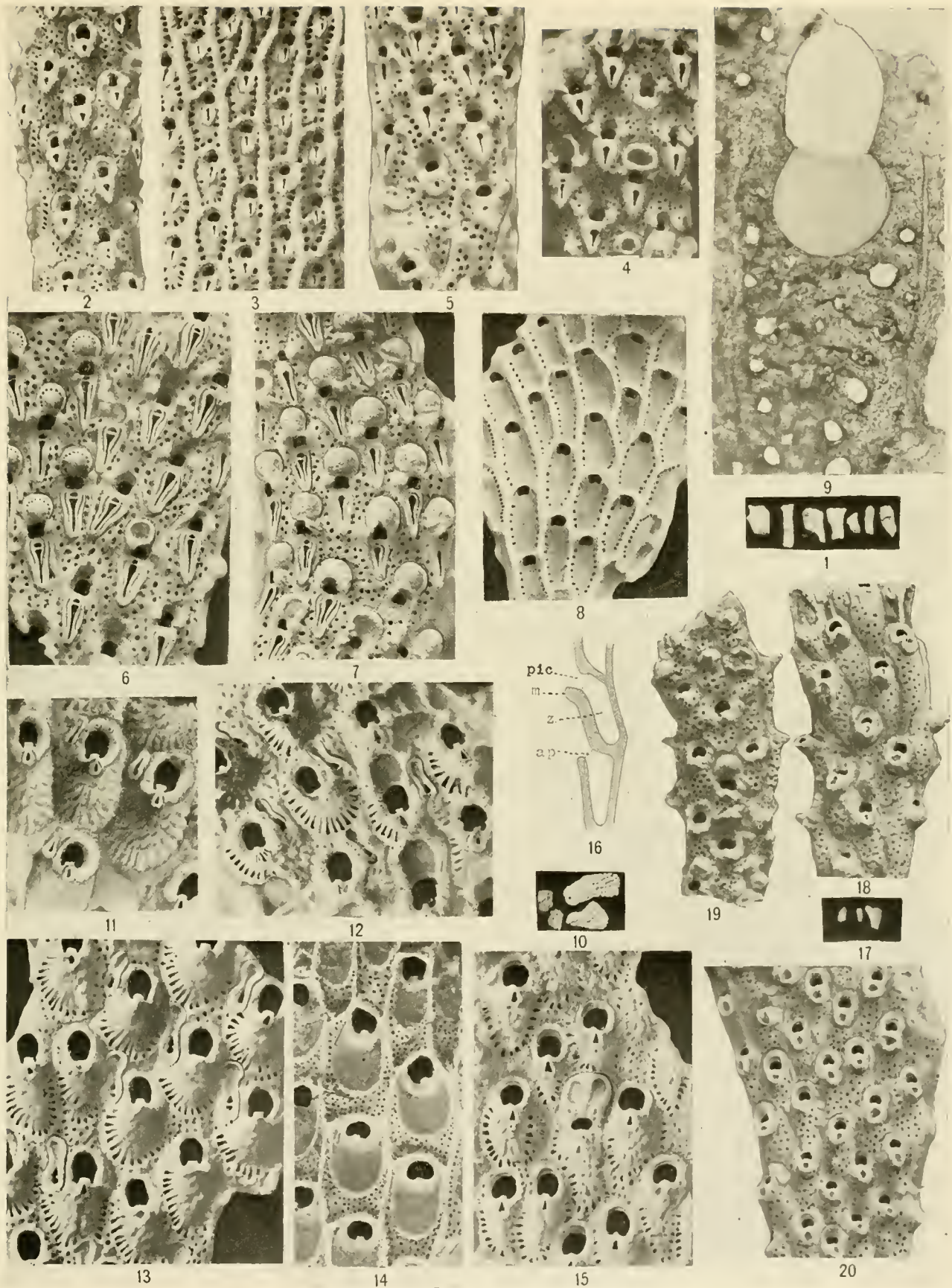
Cat. No. 64300, U.S.N.M.

FIGS. 17-20. *Porella crecta*, new species (p. 491).

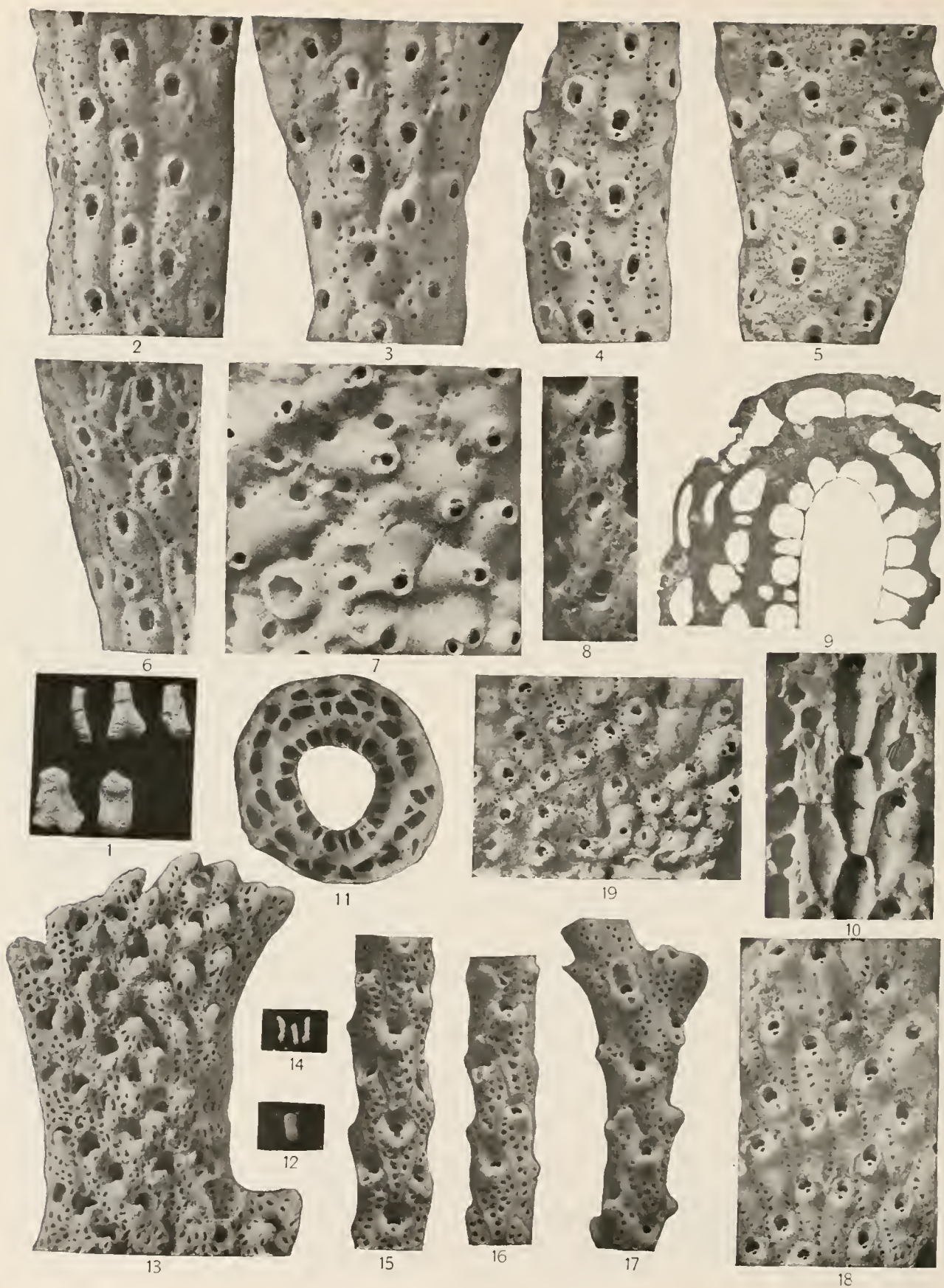
17. Several fragments of the free bilamellar zoarium, natural size.
18. A frond, $\times 20$, exhibiting the very salient umbo.
19. Another specimen, $\times 20$, with an ovicelled zooecium.
20. An unusually broad frond, $\times 20$. The umbo is broken and leaves a cicatrix.

Vicksburgian (Red Bluff member): Seven and one-half miles southwest from Bladen Springs, Alabama.

Cat. No. 64301, U.S.N.M.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 94.

FIGS. 1-11. *Smittina tubulata* Gabb and Horn, 1862 (p. 470).

1. Five of the hollow, cylindrical zoaria, natural size, showing variations in form.
2. Portion of another zoarium. $\times 20$, with the median avicularia visible.
3. Usual aspect of the zooecia, $\times 20$, with scattered areolar pores.
4. Surface of a young zoarium. $\times 20$. The areolae about each zooecium are distinctly developed.
5. A branch, $\times 20$, showing median avicularia, one zooecium with ovicell and the granulations of the pleurocyst.
6. Strongly calcified specimen. $\times 20$, showing zooecia separated by a salient ridge.
7. Surface of a plurilamellar zoarium. $\times 20$. The zooecia are wide and arranged irregularly.
8. Interior of frontal, $\times 20$, with areolar pores and median avicularia visible.
9. Transverse thin section of a plurilamellar zoarium, $\times 20$. This and figure 8 show the thickness of the zooecial frontal.
10. Interior of frontal. $\times 20$, where the lyrule is scarcely visible.
11. Transverse section of a plurilamellar zoarium. $\times 10$.

Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroe-ville, Alabama.

Cat. No. 64302, U.S.N.M.

FIGS. 12, 13. *Porrella compacta*, new species (p. 492).

12. Fragment of the bilamellar zoarium, natural size.
13. Surface of the same. $\times 20$. The short, broad umbo is characteristic.

Vicksburgian (Byram marl): Byram, Mississippi.

Cat. No. 64303, U.S.N.M.

FIGS. 14-17. *Porrella cylindrica*, new species (p. 491).

14. Fragments of the free, cylindrical zoarium, natural size.
- 15, 16. Two fragments, $\times 20$, with the structure of the tremocyst plainly visible. The front view is shown in figure 15 and the profile view in figure 16.
17. Surface of a bifurcating zoarium, $\times 20$, showing the large, median avicularium and one zooecium with broken ovicell.

Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroe-ville, Alabama.

Cat. No. 64304, U.S.N.M.

FIG. 18. *Umbonula ceratomorpha* Reuss, 1847 (p. 495).

Surface of the bilamellar zoarium. $\times 20$.

Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.

Cat. No. 64305, U.S.N.M.

FIG. 19. *Umbonula miser*, new species (p. 494).

Portion of the type-specimen, $\times 20$.

Vicksburgian (Marianna limestone): Salt Mountain, five miles south of Jackson, Alabama.

Cat. No. 64306, U.S.N.M.

PLATE 95.

FIGS. 1-9. *Smittina pupa*, new species (p. 470).

1. Fragments of the hollow, subcylindrical zoarium, natural size.
2. A bifurcating zoarium, $\times 20$. A frequent occurrence, in which the avicularia are salient and replace the tremopores.
3. Another specimen, $\times 20$, with several ovicelled zooecia.
4. An example, $\times 20$, with thick peristome and quite prominent avicularia and rare areolae.
5. Branching zoarium, $\times 20$, exhibiting a frequent aspect of the species. Some of the avicularia preserve the pivot.
6. Surface of fragment, $\times 20$, showing the oblique semilunar apertura at the bottom of the peristomie.
7. Zooecia with median avicularium preserved, $\times 20$. One of the zooecia is calcified.
8. Longitudinal section of a branch, $\times 20$. The dorsal of the zooecia is shown in the middle, and on each side is a section illustrating the internal structure.
9. Cross section of a branch, $\times 10$.

Vicksburgian ("Chinney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

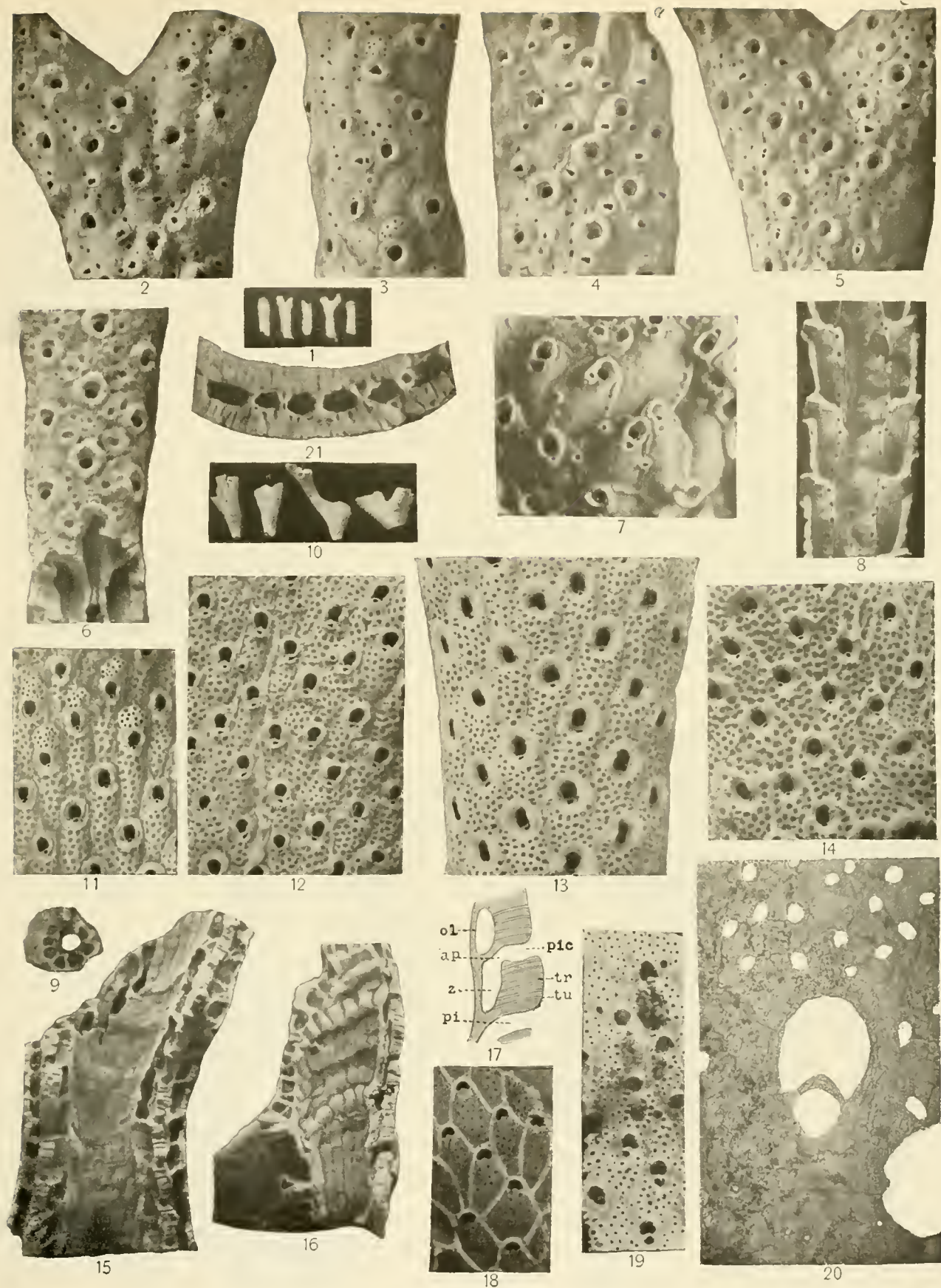
Cat. No. 64307, U.S.N.M.

FIGS. 10-21. *Porcella crassoparica*, new species (p. 490).

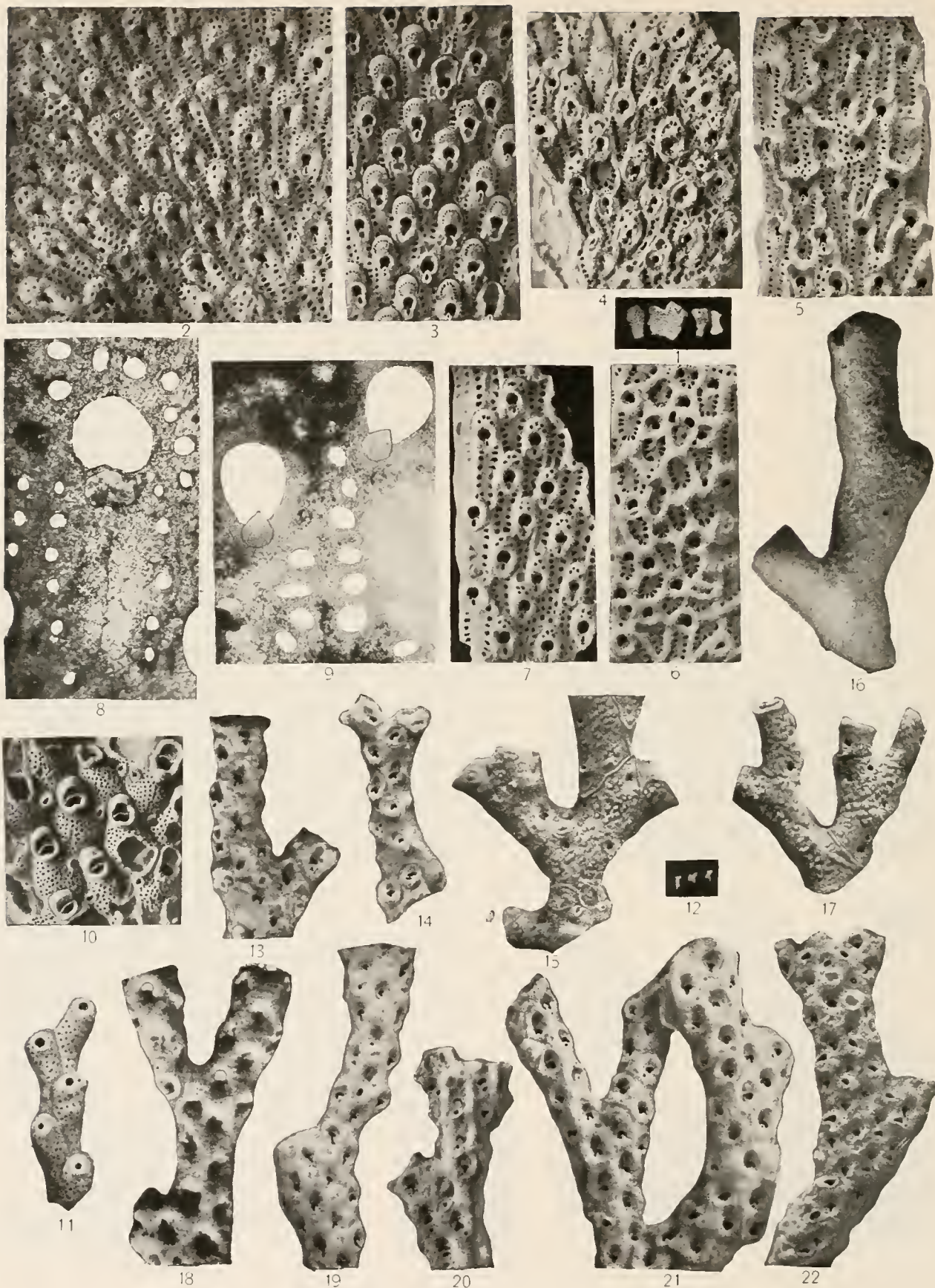
10. Four examples of the hollow, cylindrical, unilamellar zoarium, natural size.
11. Ovicelled zooecia, $\times 20$.
12. Young zooecia, $\times 20$, some of which have raised margins. The avicularia are quite visible.
13. Old zooecia, $\times 20$, exhibiting the usual aspect, with the avicularia almost invisible.
14. Surface of an old zoarium, $\times 20$. The avicularia are little visible and the zooecia appear larger.
- 15, 16. Two longitudinal sections, $\times 10$. Both the internal structure of the zooecia and the character of the dorsal are shown.
17. Sketch of a longitudinal section through several zooecia, $\times 20$.
ap., apertura; *ol.*, olocyst; *pl.*, peristomie; *pic.*, peristomice; *tr.*, tremocyst; *tu.*, tubule; *z.*, zooecium.
18. Interior of zooecial frontal, $\times 20$, exhibiting thinness of zooecial lateral walls.
19. Interior of zooecial frontal, $\times 20$, illustrating the small pores perforating the olocyst.
20. Tangential thin section, $\times 100$. The section cuts the tremocyst in the upper half and the olocyst in the lower.
21. Transverse section, $\times 20$, showing the thickness of the frontal.

Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.

Cat. No. 64308, U.S.N.M.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 96.

FIGS. 1-9. *Smittina reticuloides*, new species (p. 467).

1. Four fragments of the bilamellar zoarium, natural size, showing variations in width.
2. Surface of a broad zoarium, $\times 20$, exhibiting the usual aspect of the species.
3. A well-preserved zoarium, with the ovicells and median avicularia well shown. The pores of the ovicell area are very small.
4. A specimen, $\times 20$, with intense pleurocystal calcification.
- 5, 6. Two other examples, $\times 20$, in which the intense calcification has left salient ridges bounding the zooecia.
7. A fragment, $\times 20$, showing another aspect of the ovicelled zooecia. The pores of the ovicell are very large.
8. Tangential thin section, $\times 100$, at the level of the olocyst.
9. Another tangential thin section, $\times 100$, passing through the interareolar costules.

Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 64309, U.S.N.M.

FIG. 10. *Phylactella cribrata*, new species (p. 575).

Surface of the incrusting type-specimen, $\times 20$.

Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 64310, U.S.N.M.

FIG. 11. *Catenicella subseptentrionalis* Canu and Bassler, 1917 (p. 550).

The type-specimen, $\times 25$.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 62661, U.S.N.M.

FIGS. 12-22. *Rctepora taciniosa*, new species (p. 504).

12. Fragments of the free, branching, nonreticulated zoarium, natural size.
13. View of the frontal, $\times 20$.
14. A young specimen, $\times 20$, showing the lateral rimule-spiramen.
15. View of the dorsal surface, $\times 20$.
16. A smooth dorsal, $\times 20$.
17. Dorsal surface, $\times 20$, with tubular projections developed.
18. Frontal of specimen, $\times 20$, showing ovicells.
19. Frontal of another example, $\times 20$, with frontal avicularia.
20. Another view of the frontal, $\times 20$, with the labial avicularium much developed.
21. A frequently bifurcated specimen, $\times 20$. The rimule-spiramen and frontal tuberosity are exhibited.
22. An example, $\times 20$, in which large frontal avicularia are present.

Vicksburgian (Marianna limestone): One mile north of Monroeville, Alabama (figs. 15, 21, 22); west bank of Conecuh River, Escambia County, Alabama (figs. 13, 14, 17, 19, 20), and Salt Mountain, 5 miles south of Jackson, Alabama (figs. 16, 18).

Cat. Nos. 64311, 64312, 64313, U.S.N.M.

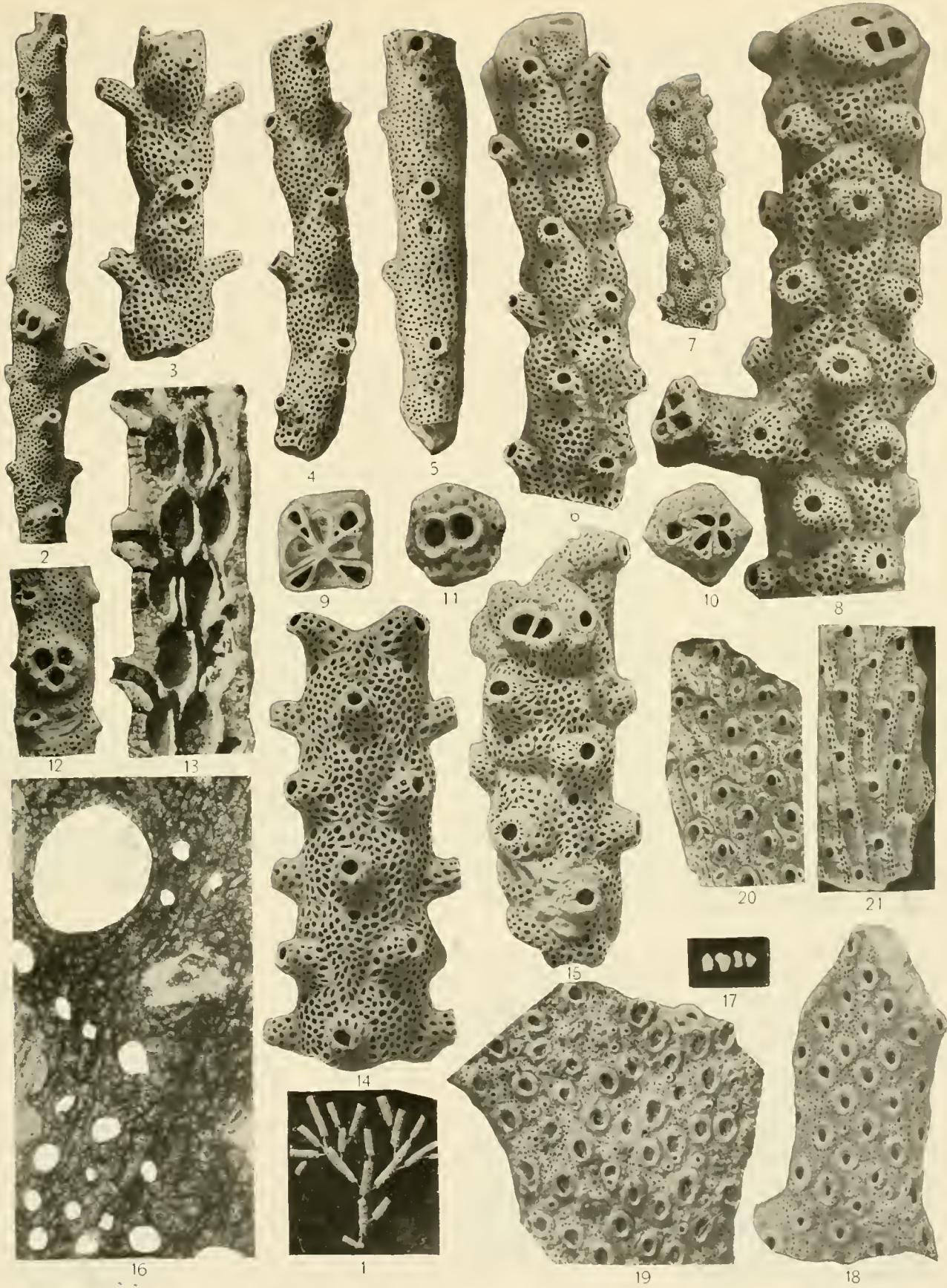
PLATE 97.

FIGS. 1-16. *Tubocellaria vicksburgica*, new species (p. 544).

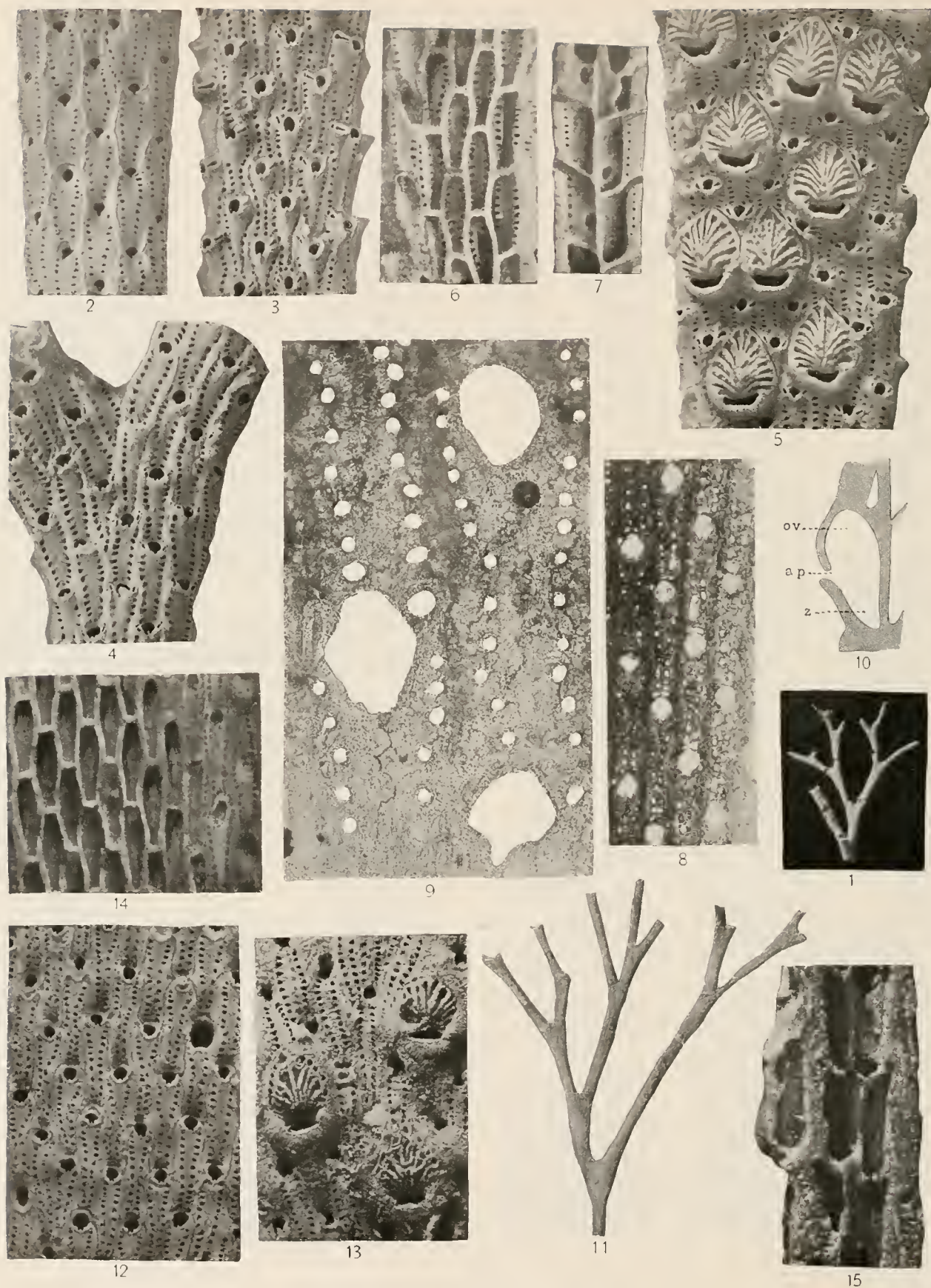
1. A restoration of the zoarium, natural size.
 2. Segment, $\times 10$, showing prominent processes perforated by two large pores, where the next segment was attached.
 - 3, 4. Young zooecia, $\times 20$, with salient peristomes.
 5. Segment with young zooecia, $\times 20$. The peristome is hardly salient. The process has two openings.
 - 6, 7. A mature segment, $\times 20$ and $\times 10$. The frontal, peristomiale and ascopore are well marked.
 8. An old segment, $\times 20$, in which the frontal is clearly separated from the peristomiale by a small groove. Two processes with 4 pores for union of the segments are visible. The peristomie is much thickened.
 9. Broken segment showing the transverse section, $\times 20$.
 10. Extremity of a segment, $\times 20$.
 11. Base of an adult segment, $\times 20$.
 12. A segment, $\times 20$, exhibiting the unusual occurrence of three pores to a process.
 13. Longitudinal section and view of the interior, $\times 20$. The thin basal olocyst has small perforations which give rise to the wide tubules.
 14. An old segment, $\times 20$, exhibiting large frontal pores and well developed ascopores.
 15. An old branching segment without process, $\times 20$, with very thick peristome and zooecia deformed by calcification.
 16. Tangential thin section, $\times 100$, showing the tremopores separated by a network.
- Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64314, U.S.N.M.

FIGS. 17-21. *Meniscopora elliptica*, new species (p. 556).

17. Several fragments of the bifoliate zoarium, natural size.
 18. A young example, $\times 20$. The areolae and frontal pores are quite visible.
 19. Surface of an older zoarium, $\times 20$. The peristomes are thick and the frontal pores are well developed.
 20. Surface of zooecia, $\times 20$, with a pointed avicularium in the vicinity of the peristomie.
 21. Interior of frontal, $\times 20$, illustrating the true form of the apertura and zooecium.
- Vicksburgian (Byram marl): One-fourth mile west of Woodward, Wayne County, Mississippi.
Cat. No. 64515, U.S.N.M.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 98.

FIGS. 1-10. *Metrarabdotos moniliferum* Milne-Edwards, 1836 (p. 533).

1. Restoration of the ramose zoarium, natural size.
2. Surface of the ordinary zooecia without avicularia, $\times 20$, bordered by ridges.
3. Another fragment, $\times 20$, showing convex zooecia with lyrula and avicularia.
4. A branching fragment, $\times 20$, exhibiting convex and marginated zooecia with and without lyrula and avicularia.
5. A branch, showing nine ovicelled zooecia, $\times 20$. The large orifice of the ovicelled zooecia is in contrast with the small aperture of the ordinary ones.
6. Interior of the frontal of the ordinary zooecia, $\times 20$. The areolae are quite visible.
7. Longitudinal section, $\times 20$, through the ordinary zooecia.
8. Tangential thin section through the frontal, $\times 25$. The sinus and lyrula of the aperture and the areolae are plainly visible.
9. Portion of the same section, $\times 100$, showing the microscopic structure in more detail.
10. Sketch of a longitudinal section, $\times 20$ cutting an ovicelled zooecium.
ap, apertura; *ov*, ovicell; *z*, zooecium.

Vicksburgian ("Chimney rock" of Marianna limestone); One mile north of Monroe-ville, Alabama.

Cat. No. 64316, U.S.N.M.

FIGS. 11-15. *Metrarabdotos grande*, new species (p. 537).

11. A restoration of the free dichotomously branching zoarium, natural size.
12. Ordinary zooecia, $\times 20$. Oral avicularia are absent.
13. Ovicelled zooecia, $\times 20$.
14. Interior of the ordinary zooecia, $\times 20$, showing a thick frontal in which the areolae are not visible.
15. Vertical section, $\times 20$, exhibiting one of the partitioned tuberosities serving perhaps in the hydrostatic system.

Vicksburgian (Marianna limestone); Three miles southeast of Vossburg, Jasper County, Mississippi.

Cat. No. 64317, U.S.N.M.

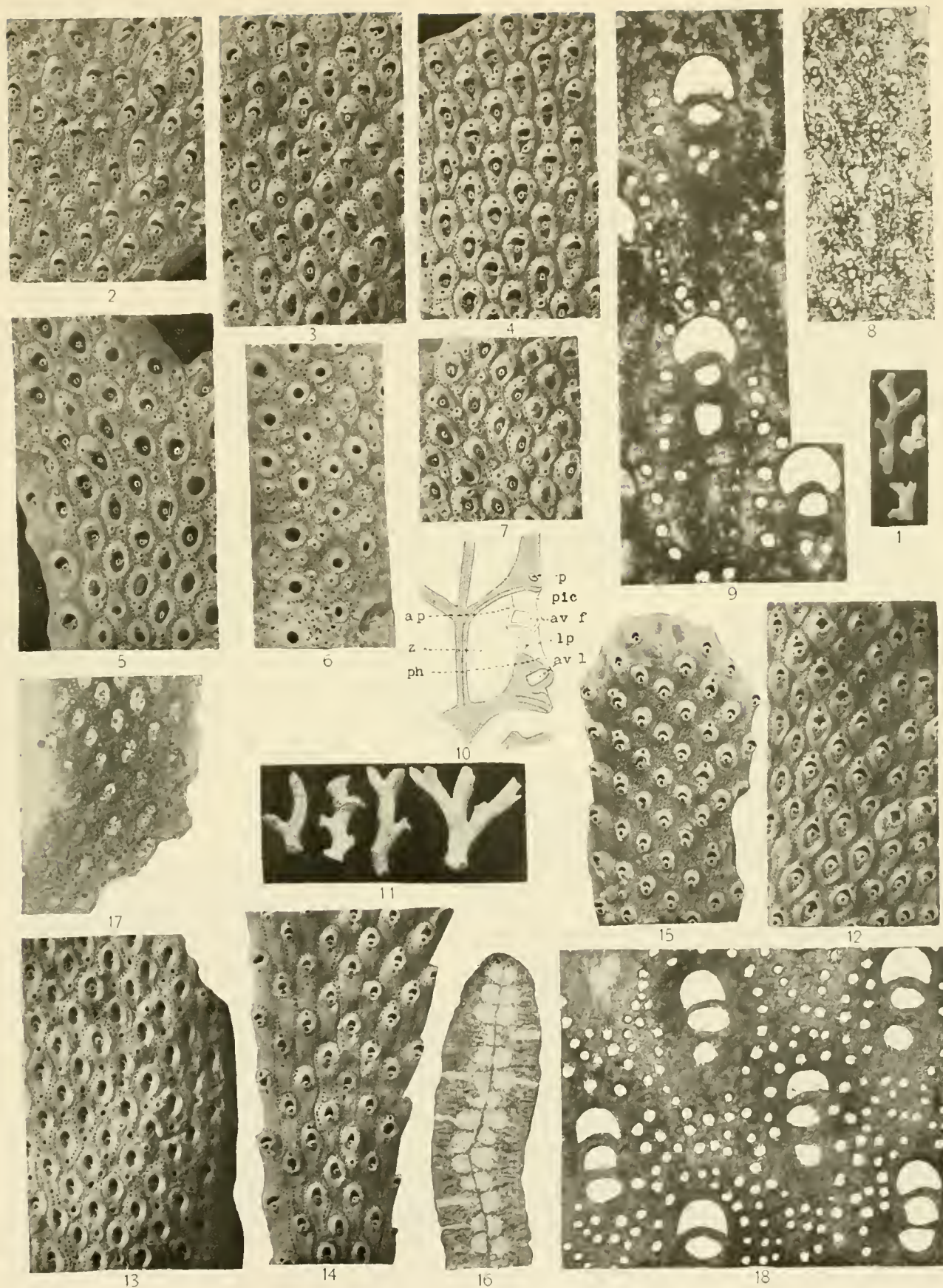
PLATE 99.

FIGS. 1-10. *Adconcellopsis galeata*, new species (p. 565).

1. Three fragmentary zoaria, natural size, including one almost complete example.
2. Young zooecia, $\times 20$, exhibiting the specific characters.
3. Another zoarium, $\times 20$, showing development of total area. Two, and sometimes three, pores may be noted on the distal thickening of the peristome.
4. A more advanced stage, $\times 20$, with the median avicularia more elongated and imbedded.
5. Surface of a zoarium, $\times 20$, in which the total area includes the apertura, cribriform area, and median avicularium.
6. Surface of old zooecia near the base of a frond, $\times 20$, where the distal thickening of the peristome disappears.
7. Surface of an old zoarium, $\times 20$, in which the adventitious avicularia are still visible.
- 8, 9. Tangential thin section, $\times 25$, and a small portion, $\times 100$, exhibiting the large pleurocystal elements.
10. Sketch of longitudinal section, $\times 50$, illustrating structure.
ap, apertura; *av. f.*, frontal avicularium; *av. l.*, lateral avicularium; *l. p.*, perforated lamina; *p.*, pore; *pic*, peristomice; *p. h.*, false hypostege; *z.*, zooecium.
 Vicksburgian (Byram marl): Byram, Mississippi.
 Cat. No. 64318, U.S.N.M.

FIGS. 11-18. *Adconcellopsis grandis*, new species (p. 568).

11. Four zoaria, natural size, almost complete.
12. Surface of zoarium, $\times 20$, with gonoezia showing the cribriform area and the peristomial avicularium well developed.
13. Broad zoarium, $\times 20$, exhibiting numerous areolae, frontal avicularia and the peristomial avicularia deeply imbedded.
14. Young zooecia, $\times 20$, with the ascopore visible below the peristomial avicularium.
15. Surface of young zoarium, $\times 20$, with prominent peristomial avicularia.
16. Thin transverse section, $\times 20$. The zooecia are thick and the pleurocystal elements are grouped transversally.
- 17, 18. Tangential thin section through the frontal, $\times 20$, and a portion, $\times 100$. The relations of the apertura, peristomial avicularium, ascopore, and areolae are illustrated.
 Vicksburgian ("Chimney rock" of Marianna limestone): One mile north of Monroeville, Alabama.
 Cat. No. 64319, U.S.N.M.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 100.

Figs. 1-11. *Adconclopsis cyclops*, new species (p. 570).

1. A complete zoarium, natural size, reconstructed from fragments.
Vicksburgian (Marianna limestone): Murder Creek, east of Castlebury, Alabama.
Cat. No. 64320, U.S.N.M.
2. Surface of mature zoarium, $\times 20$, with large cribriform area and beginning of development of total area.
3. Branch of young zoarium, $\times 20$, showing the long marginal zooecia without distal or median avicularia.
4. Portion of a well-preserved fragment, $\times 20$. The marginal zooecia are long and have a small cribriform area while the median zooecia are shorter and have a larger area.
5. Transverse fracture of branch, $\times 20$.
6. Surface, $\times 20$, of a very young zoarium showing beginning of development of total area and large areolar pores.
7. Basal portion of a zoarium, $\times 20$. At the base itself the apertures are closed and only the avicularia and areolae are present.
8. A mature specimen, $\times 20$, with total area in process of development.
9. An old zoarium, $\times 20$, in which the total area is well developed and its peristome is greatly thickened.
10. Surface of specimen, $\times 20$, with avicularium only visible at base of total area.
11. A fragment, $\times 20$, with total area developed, but avicularia and cribriform area still plainly visible.
Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64321, U.S.N.M.

Figs. 12-17. *Perigastrella costifera*, new species (p. 584).

12. A complete zoarium, $\times 20$, incrusting a cyclostome bryozoan. The apertura is visible at the bottom of the peristome and the zooecia are smooth.
13. Zooecia, $\times 20$, exhibiting areolae.
14. Another zoarium, $\times 20$, with interareolar costules and long peristomie well developed.
15. Zooecia with ovicell, $\times 20$, the latter being broken.
16. Portion of a zoarium, $\times 20$, exhibiting the ancestrula and also with some zooecia seen in profile.
17. Zooecia, $\times 20$, showing the small ancestrula.
Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64322, U.S.N.M.

Figs. 18-21. *Perigastrella plana*, new species (p. 583).

18. Surface of the incrusting zoarium, $\times 20$. This specimen shows the old condition in which the well developed pleurocyst appears as a collar about the zooecia. The ovicell is seen to be composed of two layers, the upper one being a pleurocyst.
Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.
Cat. No. 64323, U.S.N.M.
19. Another old zoarium, $\times 20$, with ovicelled zooecia and pleurocyst well developed.
20. A young zoarium in the vicinity of the ancestrula.
Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64324, U.S.N.M.
21. Another young zoarium, $\times 20$, well preserved and showing the complete peristome, spines, and areolae.
Vicksburgian (Byram marl): Byram, Mississippi.
Cat. No. 64325, U.S.N.M.

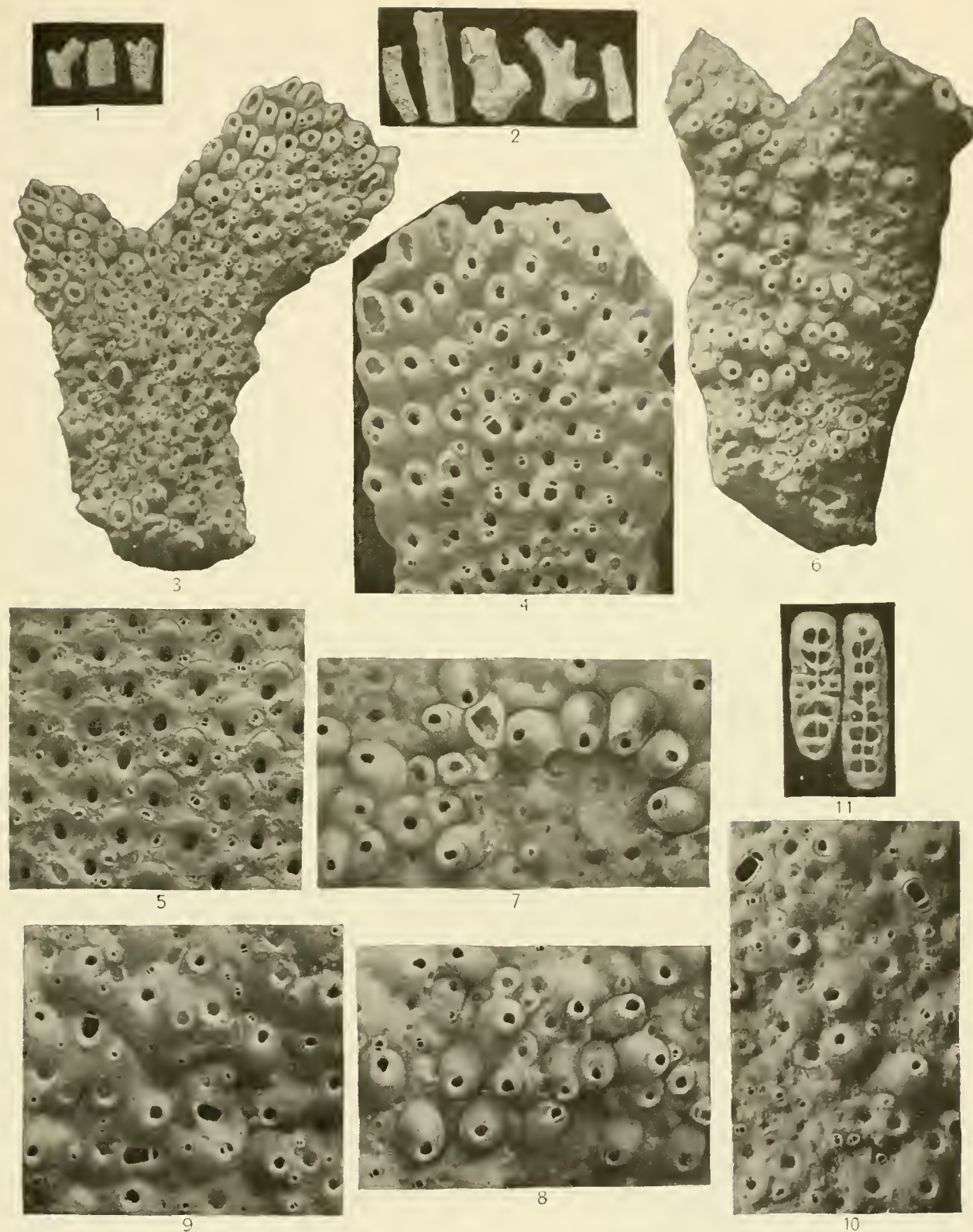
FIG. 22. *Costazzia antiqua*, new species (p. 604).

- Surface of the poorly preserved type-specimen, $\times 20$. The ovicell with its flat area and bordering pores is to be noted.
Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.
Cat. No. 64326, U.S.N.M.

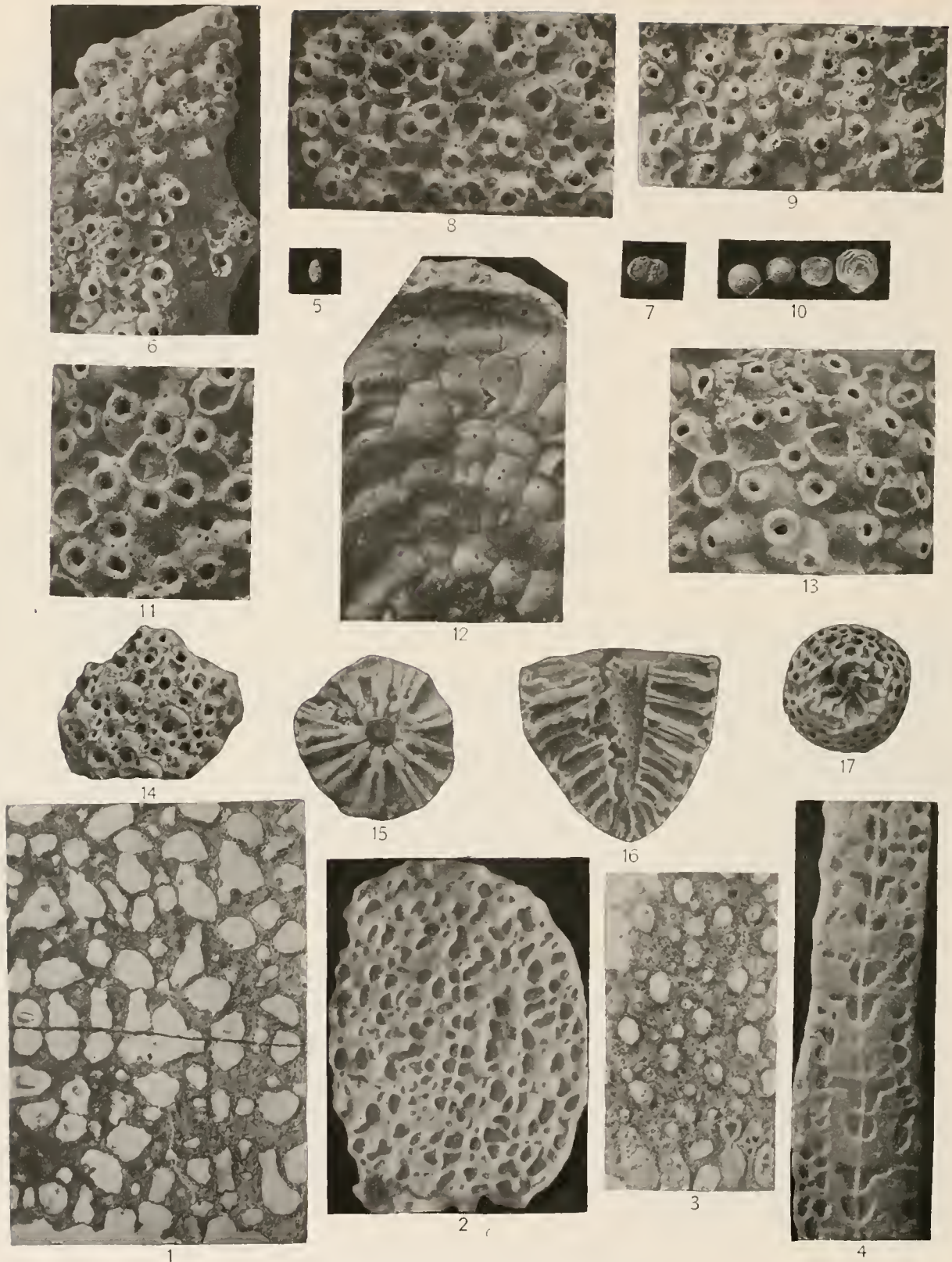
PLATE 101.

FIGS. 1-11. *Klcidionella verrucosa*, new species (p. 621). (See also plate 102.)

1. Several fragments of the bifoliate zoarium, natural size, consisting mainly of oriented zooecia.
2. A group of more robust fragments, natural size, composed of layer upon layer of cumulate zooecia.
3. A specimen shown in figure 1, $\times 10$. This example is bilamellar and exhibits the oriented zooecia mainly.
4. More magnified view of the same, $\times 20$.
5. Surface of the second specimen shown in figure 1, $\times 20$. The oriented zooecia bear numerous small avicularia with pivot and are ovicelled.
6. The third specimen of figure 1, $\times 10$. A layer of cumulate zooecia has started development over the oriented zooecia.
7. Surface of the same specimen, $\times 20$, showing an incomplete zooecium.
8. Surface of another zoarium, $\times 20$, illustrating cumulate zooecia and small avicularia with pivot.
- 9, 10. Portions of two zoaria, $\times 20$, with large interzooecial avicularia as well as the small form.
11. Cross section, $\times 10$, of the bilamellar zoarium composed only of oriented zooecia.
Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.
Cat. No. 64327, U.S.N.M.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.



VICKSBURGIAN CHEILOSTOMATOUS BRYOZOA.

PLATE 102.

FIGS. 1-4. *Kleidionella verrucosa*, new species (p. 621). (See also plate 101.)

1. A transverse thin section, $\times 20$, illustrating same features as in figure 2.
2. Transverse section of a multilamellar frond, $\times 10$. The two layers of oriented zooecia are visible in the middle, while the rest of the zoarium is composed of one layer upon another of cumulate zooecia.
3. Tangential section, $\times 20$, showing that the zooecial walls are formed of dense olocystal elements.
4. Longitudinal section, $\times 10$. The oriented zooecia in the middle and several layers of cumulate zooecia piled up on each side are to be noted.

Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.

Cat. No. 64327, U.S.N.M.

FIGS. 5, 6. *Holoporella peristomaria*, new species (p. 611).

5. Zoarium, natural size, a small irregular mass.
6. Surface of the same, $\times 20$, showing the characteristic development of the peristomie.

Vicksburgian (Byram marl): Byram, Mississippi.

Cat. No. 64328, U.S.N.M.

FIGS. 7-9. *Holoporella seposita*, new species (p. 610).

7. The free, globular zoarium, natural size.
8. Surface of zoarium, $\times 20$, showing usual aspect. Incomplete zooecia are abundant and the oral avicularia are broken and represented by a cicatrix.
9. Surface, $\times 20$, of a zoarium which has stopped growth upon completion of the superficial zooecia. The spines and the avicularia are preserved.

Vicksburgian (Glendon member of Marianna limestone): West bank of Conecuh River, Escambia County, Alabama.

Cat. No. 64329, U.S.N.M.

FIGS. 10-13. *Holoporella discus*, new species (p. 612).

10. Four of the discoidal zoaria, natural size, showing both top and basal surfaces.
11. Celluliferous surface, $\times 20$, exhibiting incomplete zooecia and areolae.
12. Basal surface of zoarium, $\times 20$, showing arrangement of zooecia and the small perforating pore.
13. Another celluliferous surface, $\times 20$, illustrating shape of the aperture.

Vicksburgian ("Chimney rock" of Marianna limestone): 1 mile north of Monroeville, Alabama.

Cat. No. 64330, U.S.N.M.

FIGS. 14-17. *Fedora pusilla*, new species (p. 624).

14. Surface of the small conical zoarium, $\times 20$. Several ovicelled zooecia are present, with apertures larger than the unovicelled ones.
15. Dorsal side of a zoarium, $\times 20$.
16. Longitudinal fracture, $\times 20$, exhibiting the hollow interior.
17. Top view of the cone-shaped zoarium, $\times 20$.

Vicksburgian (Byram marl): One-fourth mile west of Woodward, Wayne County, Mississippi.

Cat. No. 64331, U.S.N.M.

PLATE 103.

(Figs. 9-13, 18, 19 are after Ulrich.)

FIGS. 1-14. *Partretocycloecia dumosa* Ulrich, 1901 (p. 830).

1. Fragments of the free, hollow, branched zoarium, natural size.
2. Zoarial fragment, $\times 12$, bearing an ovicell which is perforated by the tubes accompanied by mesopores.
3. Transverse section of a branch, $\times 12$, cutting an ovicell.
4. Branched fragment, $\times 12$, showing that the dichotomization has occurred in different planes.
5. Branched fragment, $\times 12$, with nonsalient peristomes.
- 6, 7. Specimen with salient peristome, $\times 12$ and $\times 25$.
8. Transverse thin section, $\times 25$.
9. A branch broken longitudinally, $\times 9$, showing central cavity.
10. Small branch, $\times 9$, showing two ovicells.
11. A specimen, $\times 20$, showing an ovicell pierced by both the tubes and mesopores.
12. A broken ovicell, $\times 20$, showing tubes passing through it.
13. Portion of the fractured end of a branch, $\times 20$.
14. Longitudinal thin section, $\times 25$. The solid portions are formed of firmatopores.

Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.

Cat. No. 65239 U.S.N.M.

FIGS. 15-17. *Diplosolen compactum*, new species (p. 746).

15. Surface of the incrusting zoarium, $\times 12$. Each tube is accompanied sometimes by several tubules.
16. Normal aspect of the zoarium, $\times 12$.
17. Surface, $\times 25$.

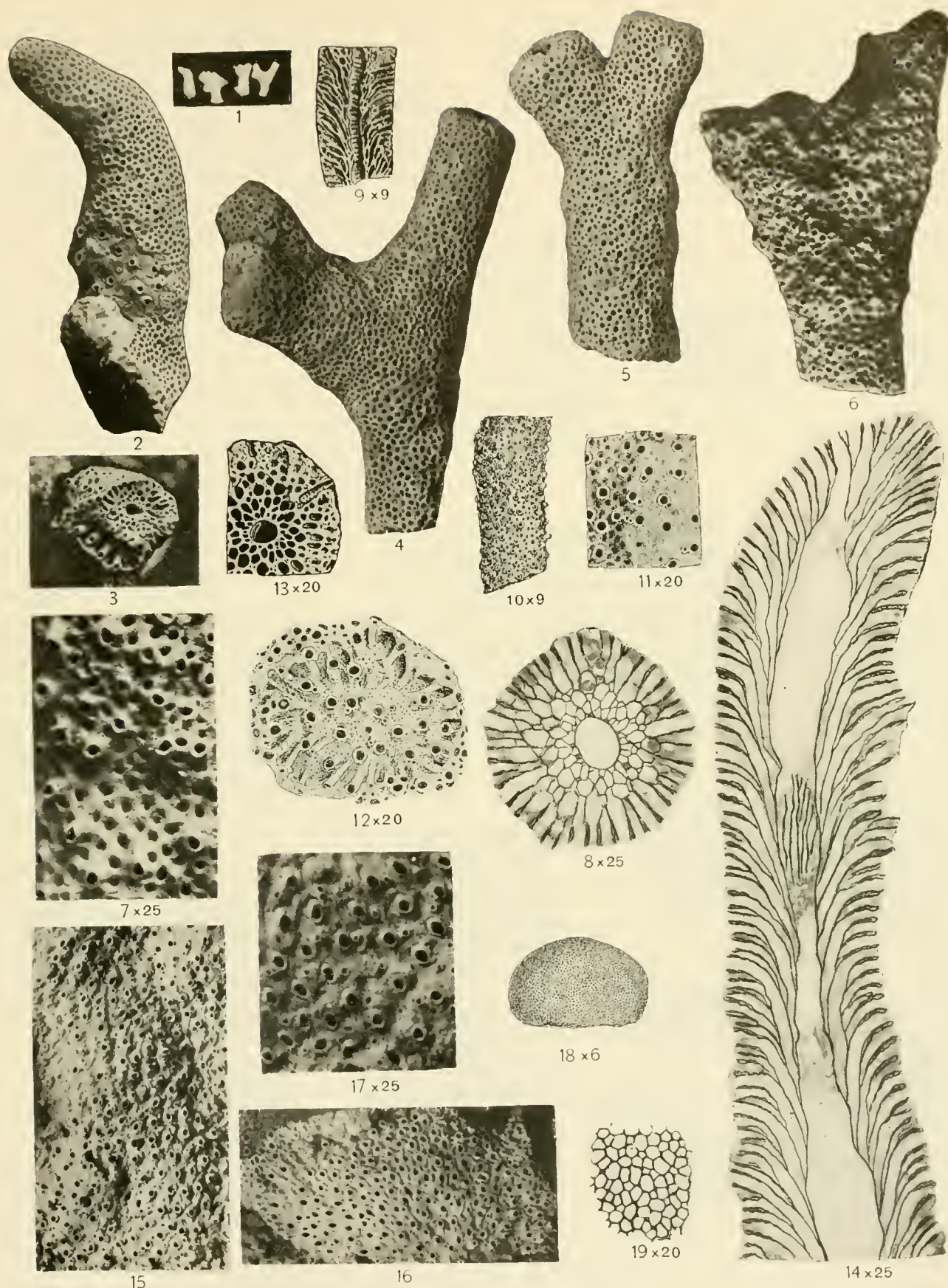
Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.

Cat. No. 65240, U.S.N.M.

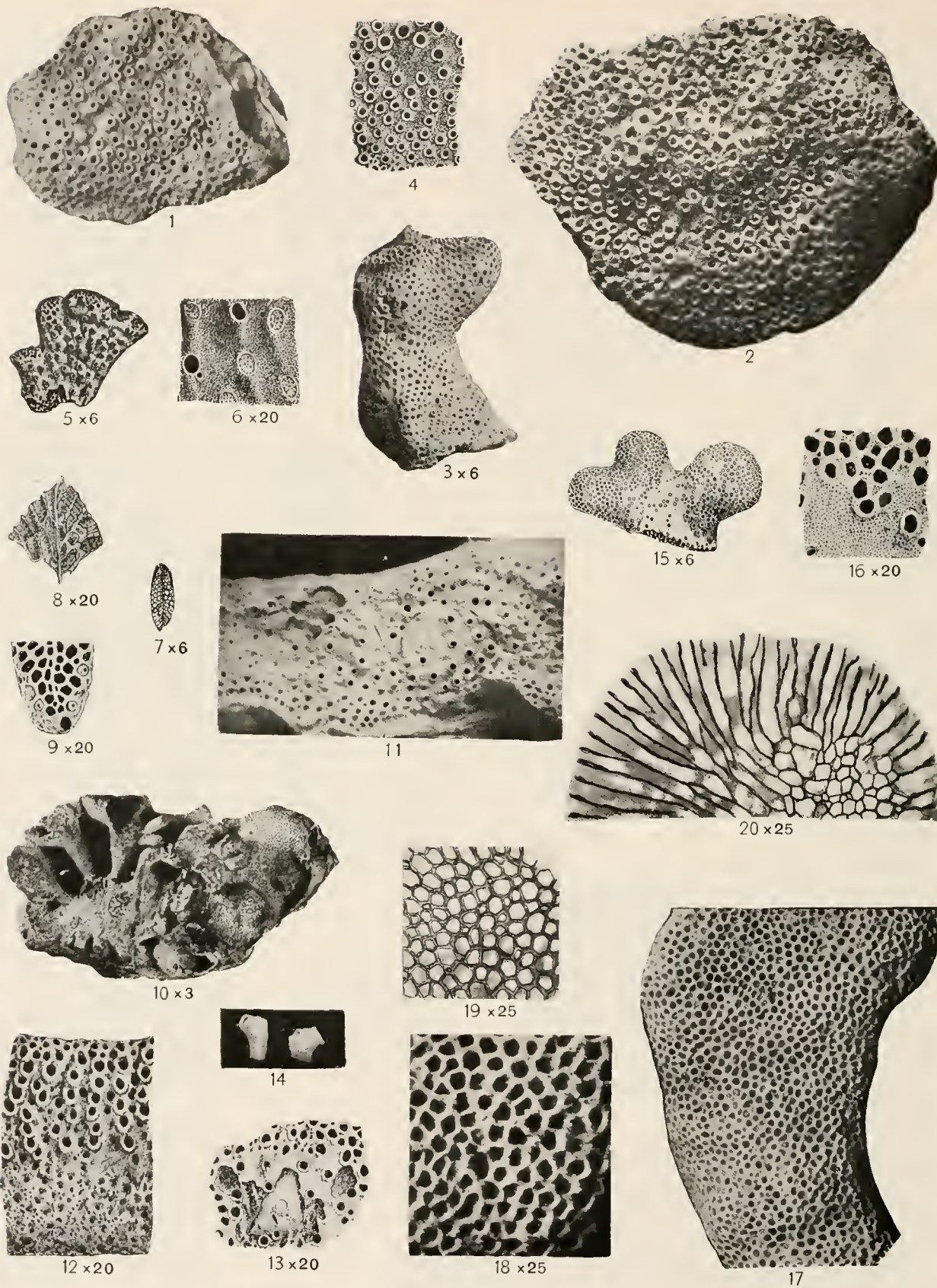
FIGS. 18-19. *Ceriopora micropora* Goldfuss (p. 679).

The globular zoarium, $\times 6$, and surface view of the same, $\times 20$, of the specimen referred to this species by Ulrich.

Eocene (Aquia formation): Two and one-half miles above Popes Creek, Maryland.



LOWEST EOCENE CYCLOSTOMATOUS BRYOZOA.



LOWEST EOCENE CYCLOSTOMATOUS BRYOZOA.

PLATE 104.

Figs. 1-4. *Diaprocopia varians* Ulrich, 1901 (p. 741).

1. A discoidal zoarium, $\times 12$, with well developed zone of growth.
2. A larger zoarium, $\times 12$.
3. A tubular zoarium, $\times 6$, preserving two ovicells.
4. Surface, $\times 12$, showing the ovicell.

Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.

Cat. No. 65456, U.S.N.M.

Figs. 5, 6. *Plagiocelia subramosa* Ulrich, 1901 (p. 709).

5. A fragment, $\times 6$.
6. Surface, $\times 20$, showing several covered apertures.

Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.

Figs. 7-13. *Lekythionia dichotoma* Gabb and Hern, 1862 (p. 747).

7. Transverse section of a fragment, $\times 6$.
- 8, 9. Upper and lower fourths of the same, $\times 20$.
10. A reticulate zoarium, $\times 3$, showing the folding of the branches.
11. Surface of ovicelled branch, $\times 12$.
12. Portion of side of a fragment, $\times 20$.
13. A broken ovicell, $\times 20$, formed over a previous intact ovicell.

Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.

Cat. No. 65457, U.S.N.M.

Figs. 14-20. *Heteropora tecta* Ulrich, 1901 (p. 682).

14. The small subramose zoarium, natural size.
15. End of a branch, $\times 6$, with apertures of tubes covered by a pellicle.
16. Portion of the same, $\times 20$.
- 17, 18. Surface of a branch, $\times 12$, and a portion, $\times 25$. The mesopores and zooecia are equally large.
19. Tangential thin section, $\times 25$.
20. Portion of a transverse thin section, $\times 25$.

Lowest Eocene (Bryozoan bed at base of Aquia formation): Upper Marlboro, Maryland.

Cat. No. 65458, U.S.N.M.

PLATE 105.

FIGS. 1, 2. *Stomatopora contracta*, new species (p. 655).

1. The type specimen, $\times 12$, showing growth in irregular polygons.
2. Portion, $\times 25$. Several of the tubes have two peristomes indicating regeneration.
Midwayan (Clayton limestone): Well, Brundidge, Alabama.
Cat. No. 65249, U.S.N.M.

FIGS. 3, 4. *Proboscina variabilis*, new species (p. 659).

3. View of the biserial zoarium, $\times 12$.
4. Portion of a branch, $\times 25$, illustrating the salient peristomes.
Midwayan (Clayton limestone). Well, Brundidge, Alabama.
Cat. No. 65250, U.S.N.M.

FIGS. 5, 6. *Bereniccia palmula*, new species (p. 669).

5. A complete zoarium, $\times 12$. This specimen could be assigned to either *Proboscina* or *Bereniccia*.
6. Portion of the same example, $\times 25$. A narrow zone of growth is preserved.
Midwayan (Clayton limestone): One mile west of Fort Gaines, Georgia.
Cat. No. 65251, U.S.N.M.

FIGS. 7-11. *Proboscina adnota*, new species (p. 659).

- 7-10. Different forms of the multiserial zoarium, $\times 12$, in varying conditions of preservation.
11. Portion of a specimen preserving the ancestrula, $\times 25$. The close arrangement of the peristomes is evident.
Midway (Clayton limestone): One mile west of Fort Gaines, Georgia.
Cat. No. 65252, U.S.N.M.

FIG. 12. *Bereniccia undata*, new species (p. 670).

- Portion of the orbicular zoarium, $\times 25$, showing strong overlapping wrinkles.
Midwayan (Clayton limestone): Luverne, Crenshaw County, Alabama.
Cat. No. 65253, U.S.N.M.



1



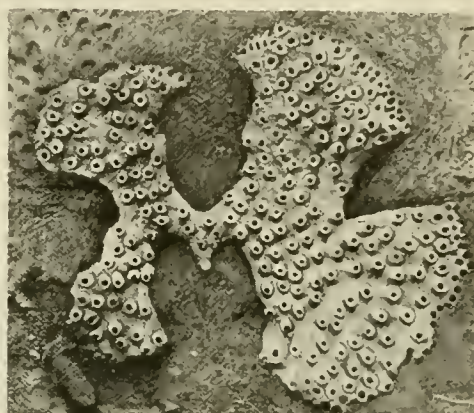
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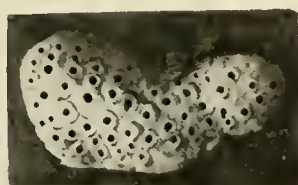
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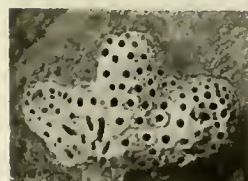
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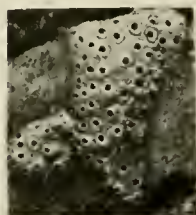
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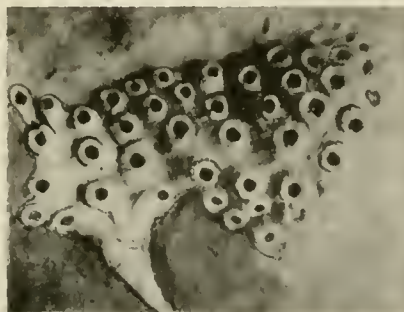
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9



10

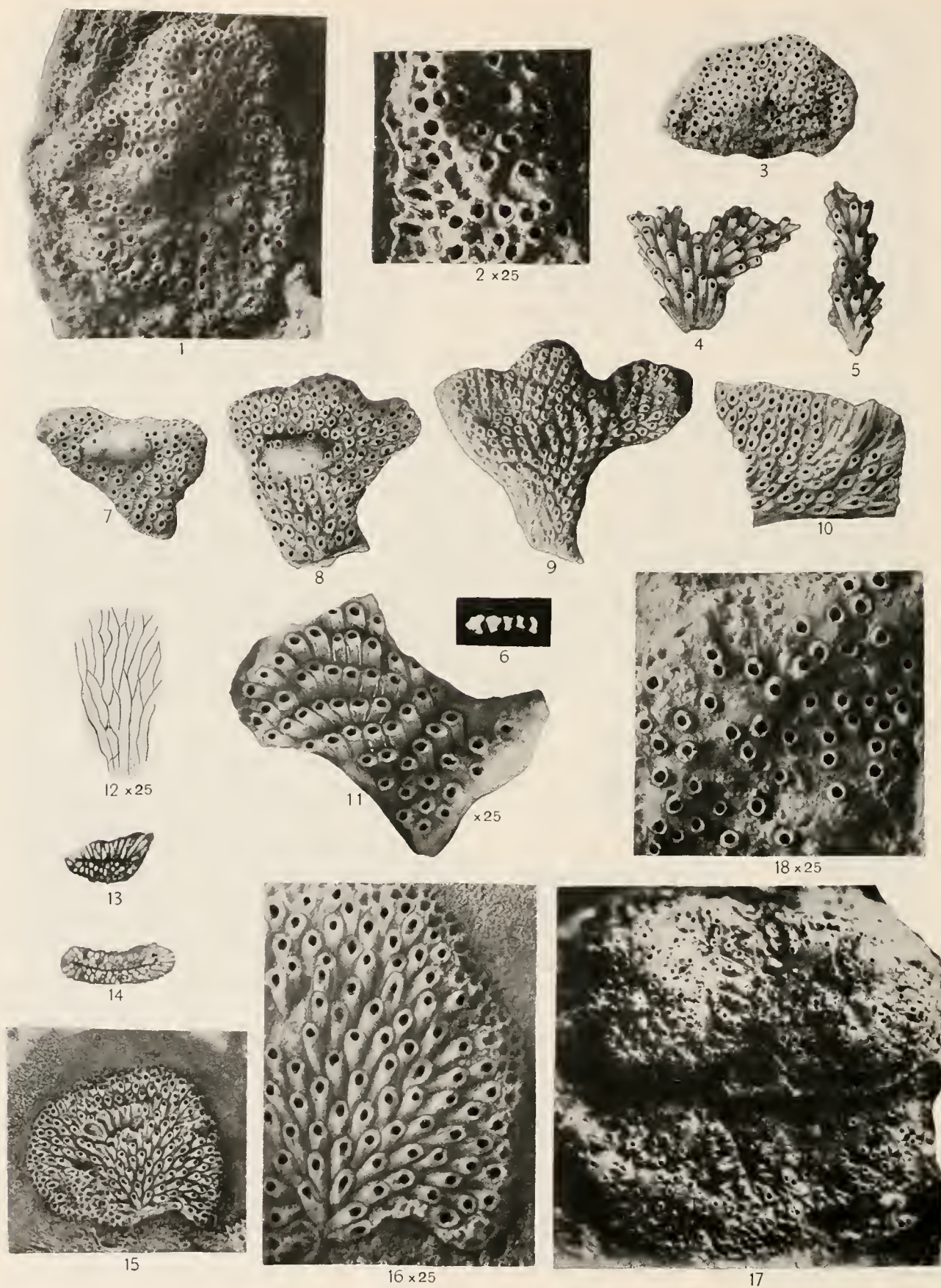


11 x25



12 x25

MIDWAYAN CYCLOSTOMATOUS BRYOZOA.



MIDWAYAN CYCLOSTOMATOUS BRYOZOA.

PLATE 106.

- FIGS. 1, 2. *Berenicea stipata*, new species (p. 670).
 1. The irregularly orbicular zoarium with crowded peristomes, $\times 12$.
 2. Portion of the same surface, $\times 25$.
 Midwayan (Clayton limestone): Luverne, Crenshaw County, Alabama.
 Cat. No. 65419, U.S.N.M.
- FIG. 3. *Berenicea brevissima*, new species (p. 671).
 The orbicular incrusting zoarium, $\times 12$, with erect short tubes.
 Midwayan (Clayton limestone): One mile west of Fort Gaines, Georgia.
 Cat. No. 65420, U.S.N.M.
- FIGS. 4, 5. *Diastopora tubuodes*, new species (p. 673).
 4, 5. The cylindrical branched, tubular zoarium, $\times 12$.
 Midwayan (Clayton limestone): Luverne, Crenshaw County, Alabama.
 Cat. No. 65421, U.S.N.M.
- FIGS. 6-14. *Plagioccia lobata*, new species (p. 710).
 6. Group of the bilamellar, flabellate zoaria, natural size.
 7. Curious triangular ovicelled lobe very narrow at the base, $\times 12$.
 8. Zoarium, $\times 12$, illustrating the globular convex ovicell.
 9. Lobe branching in the same plane, $\times 12$.
 10. Lobe branching laterally, $\times 12$.
 11. Zoarium, $\times 25$.
 12. Tangential thin section, $\times 25$, showing the minute pores.
 13, 14. Transverse sections, $\times 12$.
 Midwayan (Clayton limestone): Luverne, Crenshaw County, Alabama, and one mile west of Fort Gaines, Georgia. (Fig. 10.)
 Cat. Nos. 65422, 65423, U.S.N.M.
- FIGS. 15, 16. *Plagioccia clarioides*, new species (p. 710).
 The flabelliform, incrusting zoarium, $\times 12$, and a portion, $\times 25$.
 Midwayan (Clayton limestone). One mile west of Fort Gaines, Georgia.
 Cat. No. 65424, U.S.N.M.
- FIGS. 17, 18. *Plagioccia superposita*, new species (p. 710).
 17. The incrusting zoarium, $\times 12$, formed of superposed subcolonies.
 18. Portion of a subcolony, $\times 25$.
 Midwayan: Well at Brundidge, Alabama.
 Cat. No. 65425, U.S.N.M.

PLATE 107.

FIG. 1. *Tubulipora midwayanica*, new species (p. 753).

The small free flabellate type specimen, $\times 12$.

Midwayan (Clayton limestone): One mile west of Fort Gaines, Georgia.

Cat. No. 65243, U.S.N.M.

FIGS. 2-9. *Pleuronca fibrosa*, new species (p. 765).

2. Group of fragments, natural size.

3. Basal side of zoarium, $\times 12$, with small, narrow tergopores, giving the fibrous aspect.

4. Fragment showing the lateral ovicell, $\times 12$.

5. Zoarium with smooth basal lamella, $\times 12$, showing no tergopores.

6. Celluliferous side of the zoarium with smooth basal lamella, $\times 12$.

7. Dorsal of zoarium provided with large tergopores, $\times 12$.

8, 9. Anterior side of a zoarium with tergopores, $\times 12$, and a portion, $\times 25$.

Midwayan (Clayton limestone): Luverne, Crenshaw County, Alabama.

Cat. No. 65244, U.S.N.M.

FIGS. 10-18. *Pleuronca alveolata*, new species (p. 769).

10. Fragments of the zoarium, natural size.

11. Dorsal side of branch, $\times 12$, exhibiting the ovicell.

12. Basal side of a fragment, $\times 12$, with large funnel shaped tergopores.

13. Lateral face, $\times 12$.

14, 15. Side view of zoarium, $\times 12$, and $\times 25$.

16. Longitudinal thin section, $\times 25$. To the left are the zooecial tubes and to the right the tergopores.

17. Tangential thin section of the dorsal, $\times 25$, showing the orifice of the tergopores.

18. Transverse section of a branch, $\times 12$.

Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.

Cat. No. 65245, U.S.N.M.

FIGS. 19-24. *Idmonca tacta*, new species (p. 771).

19. Zoarial fragments, natural size.

20, 21. A wide zoarium, showing 7 tubes to the fascicle, $\times 12$ and $\times 25$.

22. Dorsal of zoarial fragment, $\times 12$.

23, 24. A narrow zoarium with 2 or 3 tubes to the fascicle, $\times 12$.

Midwayan (Clayton limestone): One mile west of Fort Gaines, Georgia.

Cat. No. 65246, U.S.N.M.

FIG. 25. *Stomatopora opposita*, new species (p. 654).

The type specimen, $\times 12$, showing there is no dichotomous branching.

Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.

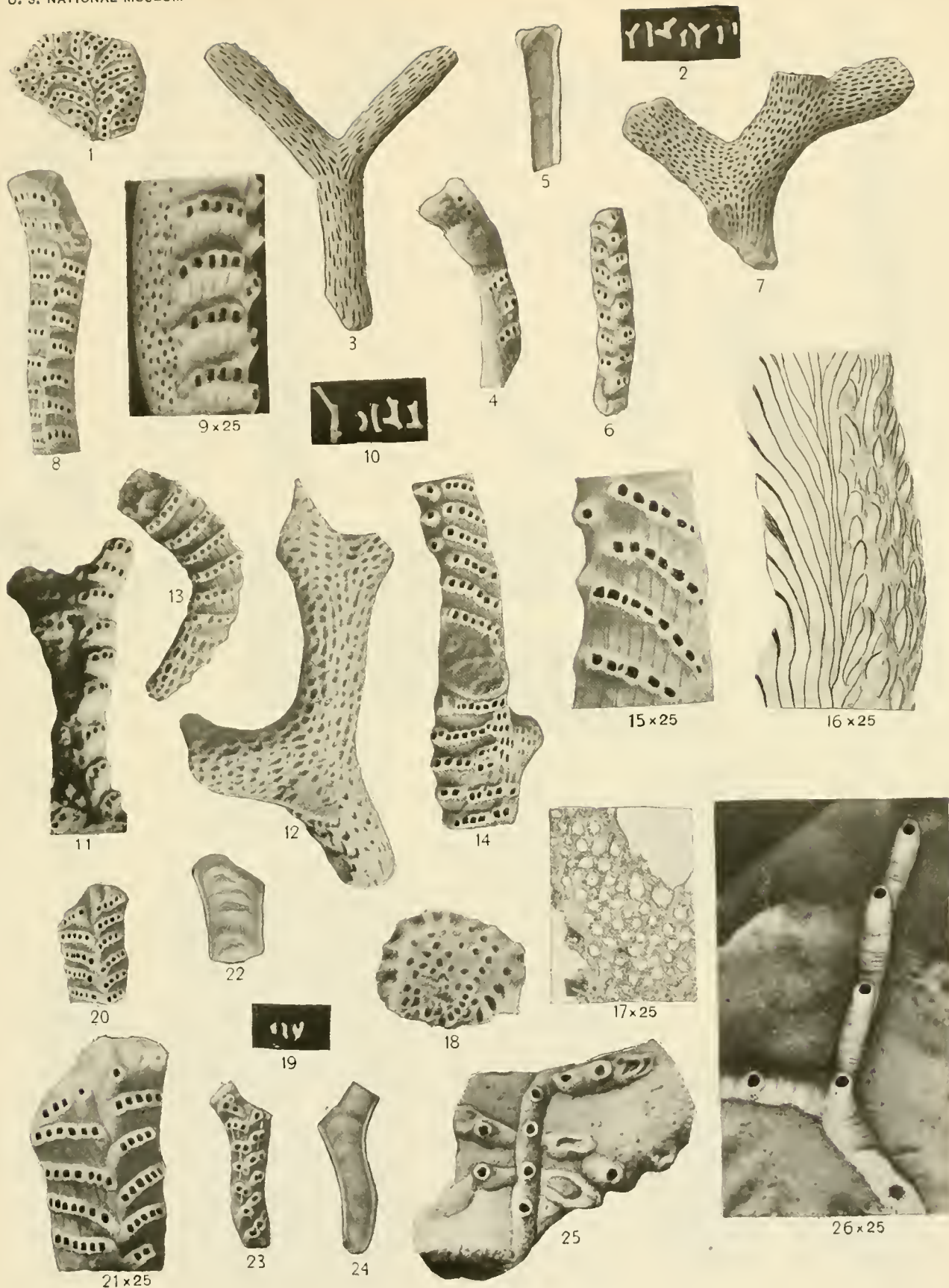
Cat. No. 65247, U.S.N.M.

FIG. 26. *Stomatopora exigua*, new species (p. 655).

Zoarium, $\times 25$, showing the characteristic narrow fusiform branches.

Midwayan (Clayton limestone): Well at Brundidge, Alabama.

Cat. No. 65248, U.S.N.M.



MIDWAYAN CYCLOSTOMATOUS BRYOZOA.



MIDWAYAN CYCLOSTOMATOUS BRYOZOA.

PLATE 108.

FIGS. 1-15. *Mecynoccia proboscidea* Milne-Edwards, 1838 (p. 726).

1. A group of fragments, natural size.
- 2-4. Three well preserved specimens, $\times 12$, showing variations.
Vicksburgian (Marianna limestone) : West bank Conecuh River, Escambia County, Alabama.
- 5-8. Four similar specimens, $\times 12$, from the Jacksonian.
Cat. No. 65437, U.S.N.M.
- 9-11. Three transverse section, $\times 12$, taken at different heights from the same specimen.
- 12, 13. Two transverse sections, $\times 25$.
14. Longitudinal thin section, $\times 12$.
15. Longitudinal thin section, $\times 12$, of a specimen with thick walls.
Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina .
- Cat. No. 65438, U.S.N.M.

FIG. 16. *Entalophora stipata*, new species (p. 734).

- The cylindrical clubshaped zoarium, $\times 12$.
Midwayan (Clayton limestone) : Mabelvale, near Little Rock, Arkansas.
Cat. No. 65439, U.S.N.M.

FIGS. 17-25. *Ascosoccia prominens*, new species (p. 836).

- 17, 18. The solid branching zoarium, natural size, and two specimens, $\times 3$.
- 19, 20. Surface of a branch with salient peristome, $\times 12$ and $\times 25$.
- 21, 22. Transverse and longitudinal thin sections, $\times 25$. The mesopores are as wide as the tubes.
- 23, 24. Tangential thin section, $\times 25$, and a small portion, $\times 100$.
25. Fragment, $\times 12$, exhibiting three ovicells.
Midwayan (Clayton limestone) : Mabelvale, near Little Rock, Arkansas.
Cat. No. 65440, U.S.N.M.

PLATE 109.

FIGS. 1-9. *Tretocyclocelia ? attenuata* Ulrich, 1882 (p. 826).

1. Examples of the solid, cylindrical zoarium, natural size.
2. Specimen, $\times 12$, exhibiting a broken ovicell.
3. 4. Rounded extremity of a branch, $\times 12$ and $\times 25$. There is no zone of growth.
5. Branched zoarium, $\times 12$. There are a few mesopores.
6. Portion of fig. 5, $\times 25$.
7. Longitudinal thin section, $\times 20$. The mesopores are short and few.
8. Transverse thin section, $\times 20$. The walls of the mesopores are vesicular.
9. Tangential thin section, $\times 20$. The mesopores are few.

Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.

Cat. No. 65256, U.S.N.M.

FIGS. 10-12. *Mecynocelia luvencensis*, new species (p. 727).

10. Two fragments, natural size.
- 11, 12. Celluliferous sides of the same specimens, $\times 12$.

Midwayan (Clayton limestone): Luverne, Crenshaw County, Alabama.

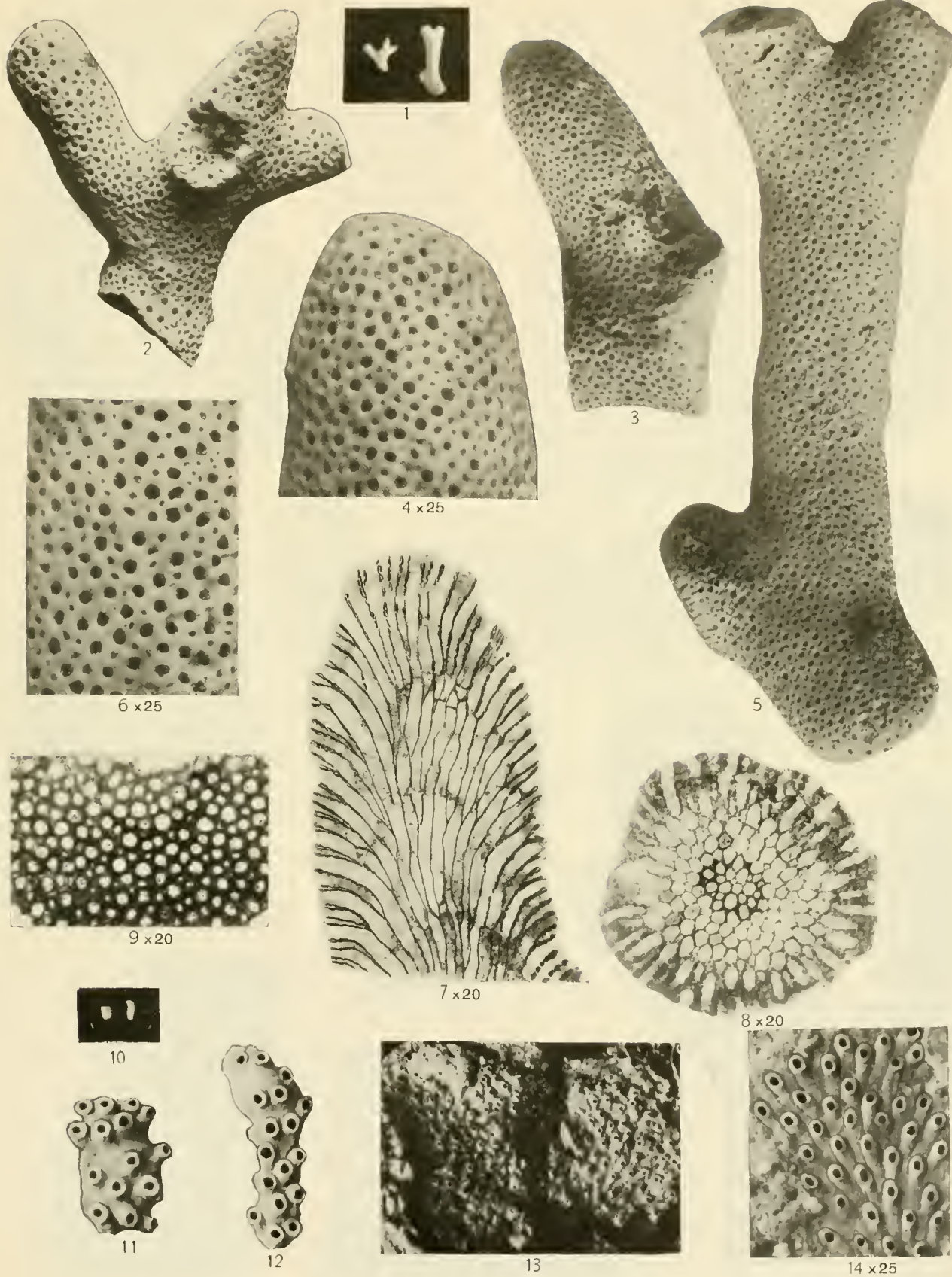
Cat. No. 65257, U.S.N.M.

FIGS. 13, 14. *Plagiocelia brundidgensis*, new species (p. 711).

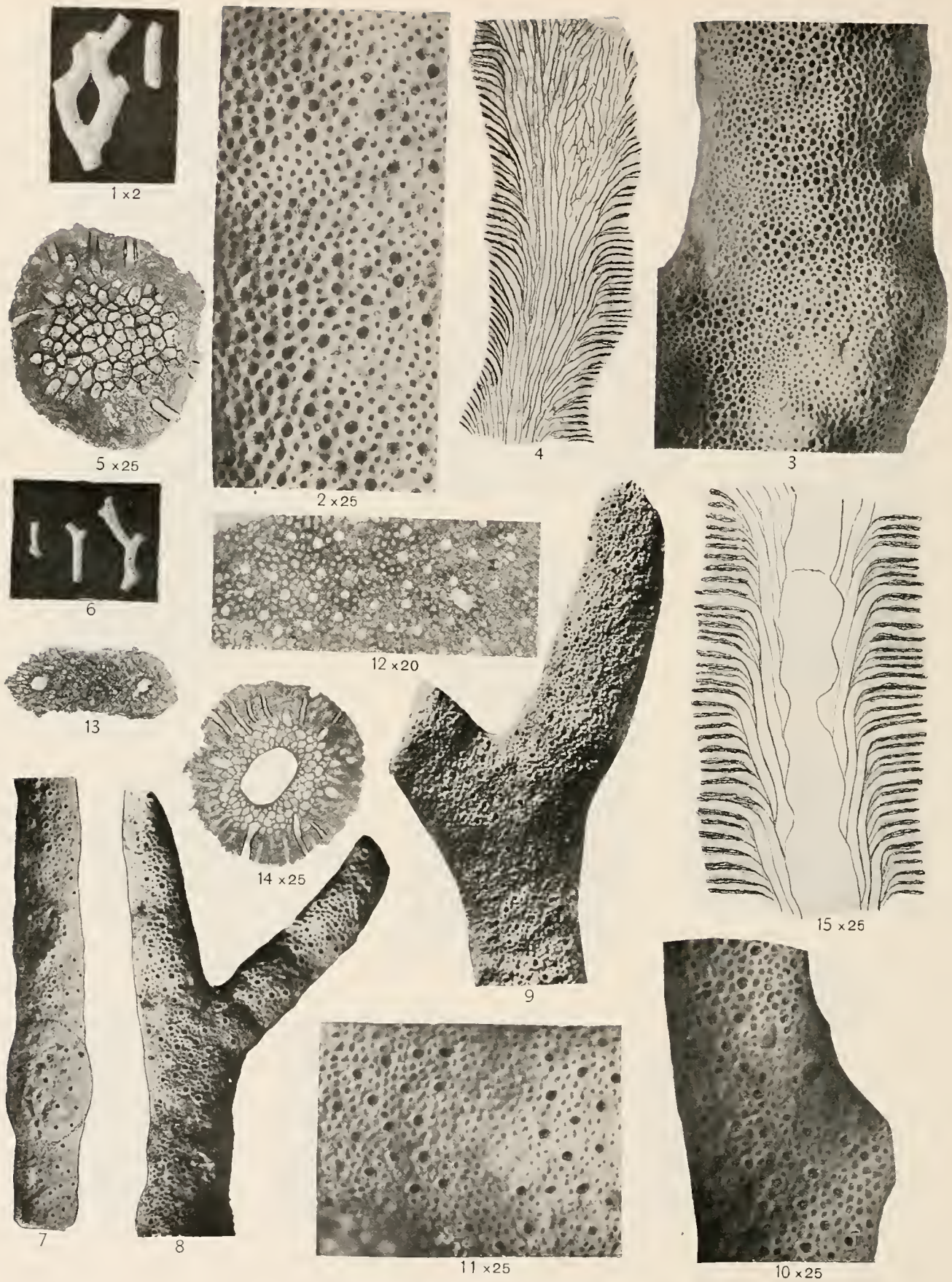
13. The incrusting zoarium, $\times 12$, showing the very convex short ovicell at the upper left corner.
14. Portion, $\times 25$. The tubes are small and distinct.

Midwayan (Clayton limestone): Well at Brundidge, Alabama.

Cat. No. 65258, U.S.N.M.



MIDWAYAN CYCLOSTOMATOUS BRYOZOA.



MIDWAYAN CYCLOSTOMATOUS BRYOZOA.

PLATE 110.

FIGS. 1-5. *Ascosoccia* ? (*Zonopora*) *ulrichi*, new species (p. 836).

1. The solid cylindrical zoarium, $\times 2$.
2. Surface, $\times 25$, exhibiting the zones of mesopores.
3. The same zoarium, $\times 12$.
4. Longitudinal thin section, $\times 12$. The walls of the mesopores are vesicular.
5. Transverse thin section, $\times 25$.

Midwayan (Clayton limestone) : Mabelvale, near Little Rock, Arkansas.

Cat. No. 65261, U.S.N.M.

FIGS. 6-15. *Parascosoccia consimilis* Ulrich, 1882 (p. 840).

6. Examples of the hollow cylindrical zoarium, natural size.
7. Ovicelled zoarium, $\times 12$.
8. Branching fragment, $\times 12$, well preserved with salient peristomes.
9. Somewhat worn zoarium, $\times 12$, exhibiting the usual aspect of specimens.
10. Surface of specimen shown in figure 8, $\times 25$.
11. Surface of worn example (fig. 9), $\times 25$.
12. Tangential thin section, $\times 20$.
13. Transverse thin section, $\times 12$, through a branch containing two longitudinal cavities.
14. Transverse thin section, $\times 25$.
15. Longitudinal thin section, $\times 25$.

Midwayan (Clayton limestone) : Mabelvale, near Little Rock, Arkansas; one mile west of Fort Gaines, Georgia (figs. 9, 11).

Cat. Nos. 65262, 65263, U.S.N.M.

PLATE 111.

FIGS. 1-4. *Heteropora alveolata*, new species (p. 682).

1. The massive zoarium with cylindrical branches, natural size.
2. A cylindrical branch, $\times 12$.
3. Longitudinal thin section, $\times 25$.
4. Portion of a transverse thin section, $\times 25$.

Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.

Cat. No. 65254, U.S.N.M.

FIGS. 5-10. *Cerriopora vesiculosa*, new species (p. 679).

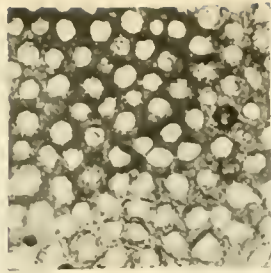
5. The massive zoarium, natural size.
6. Surface, $\times 25$.
7. Tangential thin section, $\times 25$.
8. Portion of a transverse thin section, $\times 25$. The walls of the tubes are vesicular.
9. Portion of another transverse section, $\times 25$.
10. Longitudinal thin section, $\times 25$, of the type specimen composed of many superposed layers although not separated.

Midwayan (Clayton limestone): Mabelvale, near Little Rock, Arkansas.

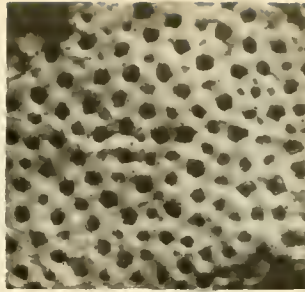
Cat. No. 65255, U.S.N.M.



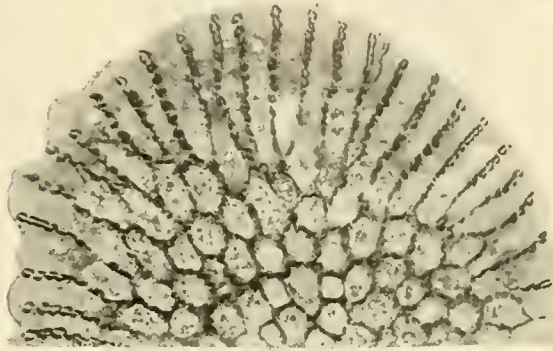
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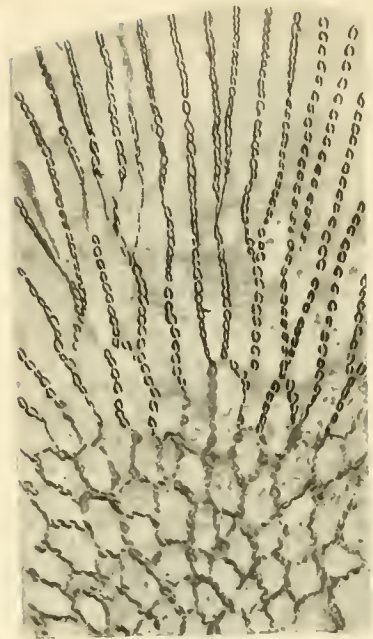
7 x 25



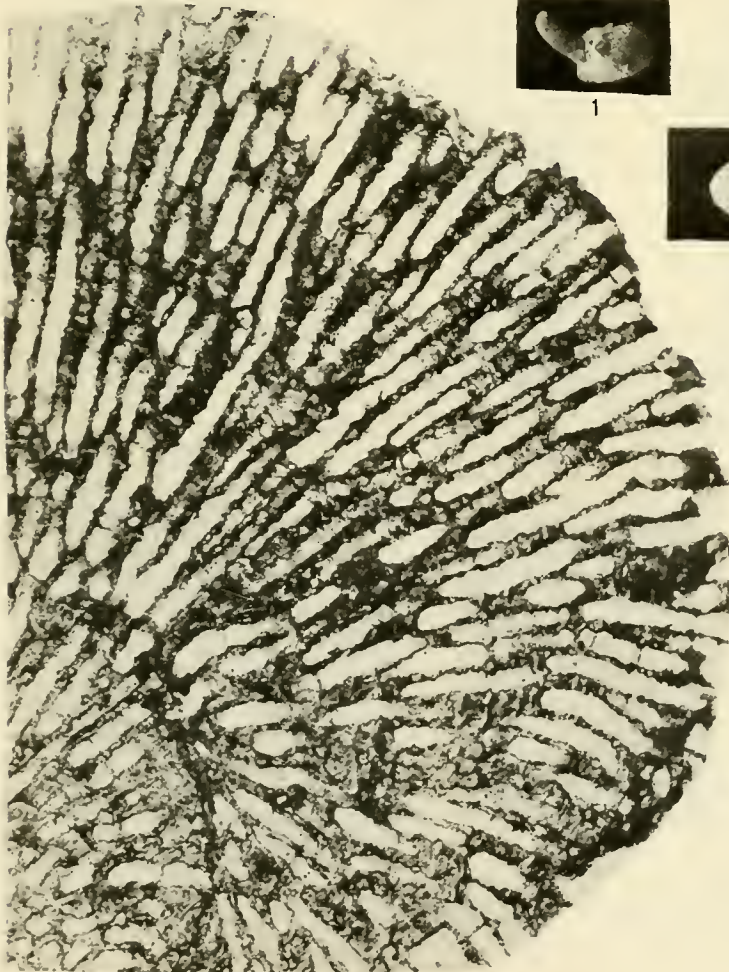
6 x 25



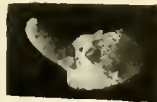
9 x 25



8 x 25



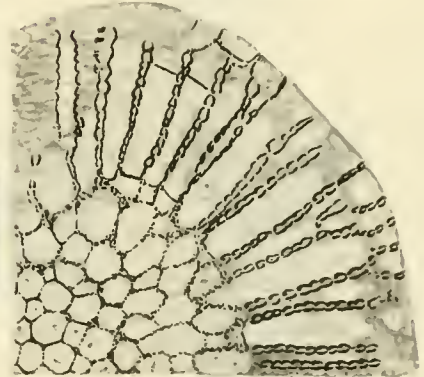
10 x 25



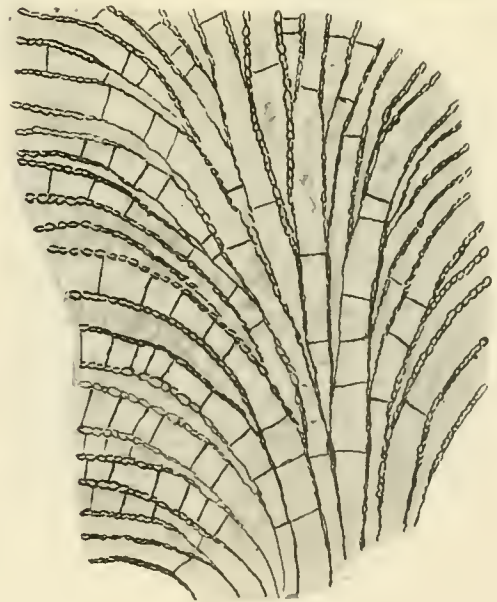
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5

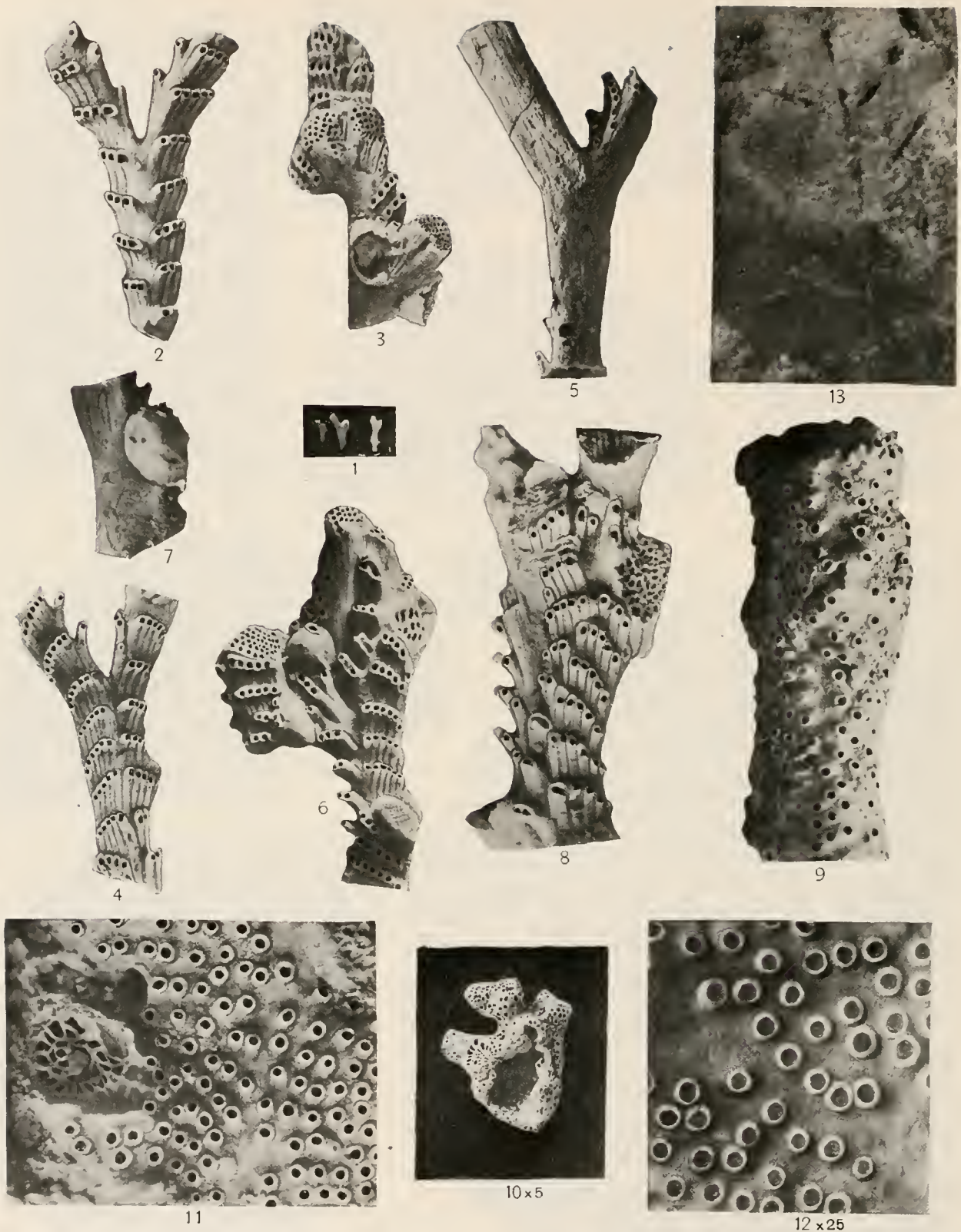


4 x 25



3 x 25

MIDWAYAN CYCLOSTOMATOUS BRYOZOA.



WILCOXIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 112.

FIGS. 1-8. *Lagonacia lamellifera*, new species (p. 792).

1. Three fragments, natural size of the *Idmonea* like zoarium.
2. Branch, $\times 12$, with transverse fascicles.
3. Reticulate zoarium, $\times 12$, showing a broken ovicell, formed after the calcification of the neighboring tubes.
4. Anterior face of a bifurcated zoarium, $\times 12$.
5. Posterior face of the same example, $\times 12$.
6. Reticulate zoarium, $\times 12$, showing the ovicell placed above a bifurcation and the triangular zone of growth.
7. View of branch, $\times 12$, showing the ovicell suspended on the lateral edge. The oeciostome is visible at the top.
8. The fascicles are transverse, $\times 12$.

Wilcoxian (Bashi formation): Woods Bluff, Alabama.

Cat. No. 65264, U.S.N.M.

FIGS. 9-12. *Plagioccia tubifer*, new species (p. 711).

9. Fragment of tubular, ovicelled zoarium, $\times 12$.
10. A free zoarium with its tubular expansions, $\times 5$.
11. Zoarium, $\times 12$, incrusting a shell and showing (to the left) the base of a tubular expansion.
12. Portion of the same specimen, $\times 25$.

Wilcoxian (Bashi formation): Woods Bluff, Alabama.

Cat. No. 65265, U.S.N.M.

FIG. 13. *Terebripora*, species (p. 842).

The incomplete specimen, $\times 20$, upon which this identification is based.

Midwayan (Porters Creek formation): 3 miles north of Scooba, Mississippi.

PLATE 113.

FIGS. 1-5. *Entalophora crassa*, new species (p. 735).

- 1, 2. The thick, branched zoarium, natural size and $\times 12$.
3. Portion of the surface, $\times 25$.
4. Longitudinal thin section, $\times 25$.
5. Transverse thin section, $\times 25$, showing polygonal tubes.

Claibornian (Gosport sand) : One mile southwest of Rockville, Clarke Connty, Alabama.
Cat. No. 65431, U.S.N.M.

FIGS. 6-15. *Pleuromca subpertusa*, new species (p. 767).

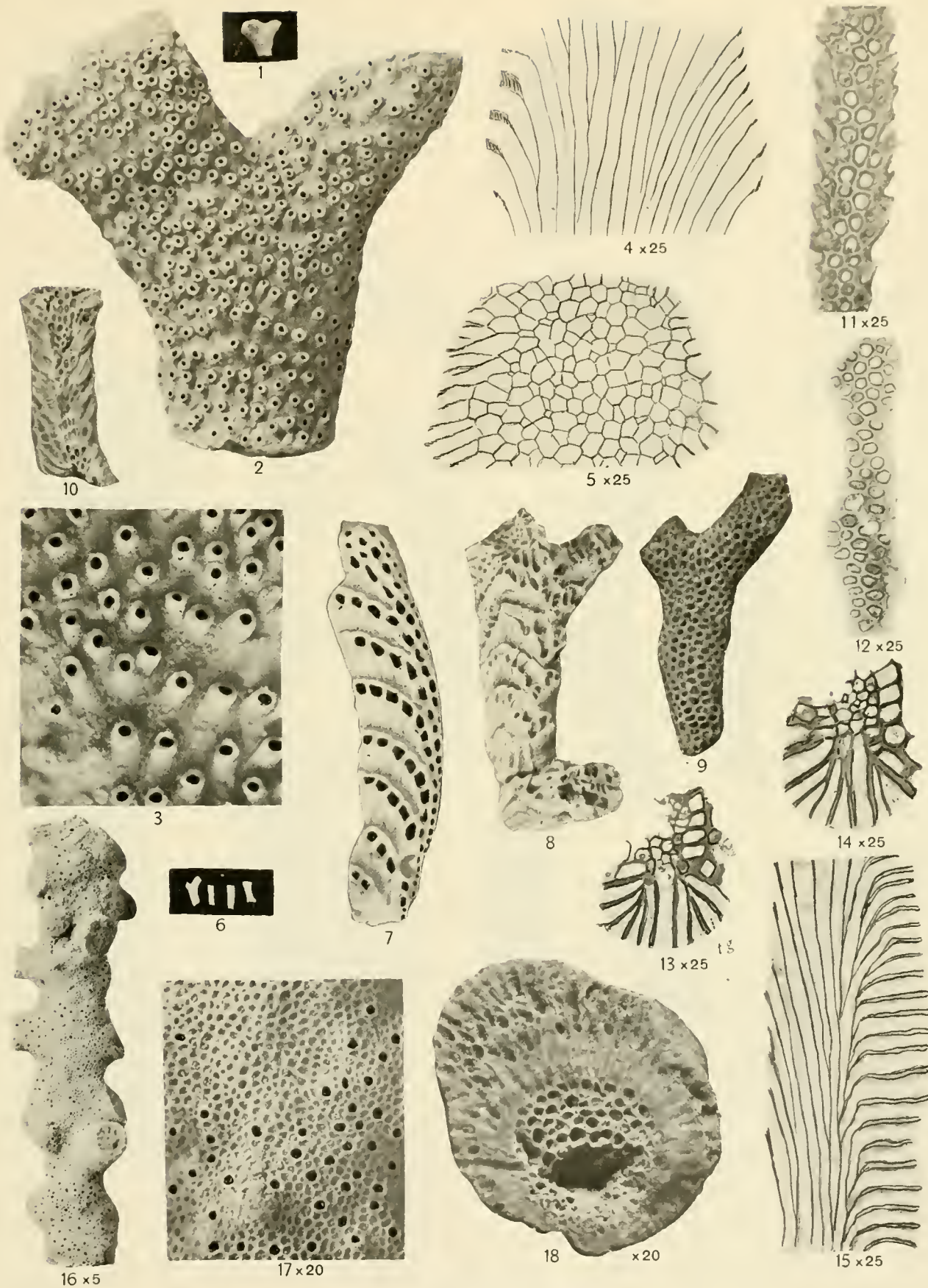
6. Zoarial fragments, natural size.
7. Lateral face of a zoarium, $\times 12$, showing oblique fascicles.
8. Frontal of another specimen, $\times 12$.
9. Dorsal of a zoarium, $\times 12$, illustrating the large tergopores.
10. Broken branch, $\times 12$, showing that the dorsal composed of tergopores separates easily from the polypidial tubes.
11. Tangential thin section, $\times 25$. The tergopores are polygonal and the interstices are not calcified.
12. Another tangential section, $\times 25$, in which the interstices between the tergopores are calcified.
- 13, 14. Transversal section, $\times 25$.
15. Longitudinal section, $\times 25$. The tergopores are short, but well marked and occur at all heights.

Lower Jacksonian (Moody's marl) : Jackson, Mississippi.
Cat. No. 65432, U.S.N.M.

FIGS. 16-18. *Heteropora amoena* De Gregorio, 1890 (p. 683).

16. Zoarium with its numerous apophyses, $\times 5$.
17. Surface of the zoarium, $\times 20$.
18. Transverse section cutting an apophysis, $\times 20$.

Lower Jacksonian (Moody's marl) : Jackson, Mississippi.
Cat. No. 65433, U.S.N.M.



CLAIBORNIAN CYCLOSTOMATOUS BRYOZOA.



CLAIBORNIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 114.

Figs. 1-18. *Pleuroea fenestrata* Busk, 1859 (p. 766).

- 1, 2. Reticulate zoaria, natural size and $\times 2$.
 3. Anterior side of a zoarium, $\times 12$, having large tergopores on the basal lamella.
 4. Dorsal of the same zoarium, $\times 12$, showing large tergopores.
 5. Dorsal of zoarium, $\times 12$, having small tergopores and false sulci.
 6. Basal branch, $\times 12$. The tergopores encroach on the frontal.
 7. Dorsal of the same specimen, $\times 12$. The tergopores are small.
 8. Lateral face of a basal branch, $\times 12$, showing the transverse section.
 9. Transverse section, $\times 25$.
 10. Frontal of an ovicelled zoarium, $\times 12$. The oeciopore is visible.
 11. Dorsal of the same zoarium, $\times 12$.
 12. Basal branch with small frontal tergopores, $\times 12$.
 13. Dorsal of the same zoarium having small tergopores and false sulci, $\times 12$.
 - 14, 15. Frontal of a normal branch, $\times 12$, and a portion, $\times 25$.
 16. Lateral face of a branch, $\times 12$, with frontal tergopores on lower part only.
 17. Dorsal of a zoarium, $\times 25$, having tergopores with elongated orifices forming false sulci.
 18. Longitudinal thin section, $\times 25$. The tergopores are rarely in the axis of the zooecia but appear entangled.
- Lower Jacksonian (Moodys marl): Jackson, Mississippi (figs. 1-4, 10-13, 16-18).
 Claibornian, one mile southeast of Rockville, Alabama (figs. 5-9, 14, 15).
 Cat. Nos. 65266, 65267, U.S.N.M.

PLATE 115.

FIG. 1. *Stomatopora excavans*, new species (p. 656).

The type-specimen, $\times 25$, showing growth upon a shell which it excavates.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.

Cat. No. 65274, U.S.N.M.

FIGS. 2-6. *Plagiocelia globulosa*, new species (p. 713).

2. Fragments of the cylindrical, hollow zoarium, natural size.

3. A hollow zoarium, $\times 12$, in which the broken ovicell permits a view of the subjacent peristomes.

4. A tubular, ovicelled zoarium, $\times 12$, incrusting an alga at the ramification of the frond.

5. Extremity of the hollow branch, $\times 12$, showing that the zoarium surrounds a delicate radicle of an alga.

6. The same specimen, $\times 25$, illustrating aspect of zone of growth.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.

Cat. No. 65275, U.S.N.M.

FIGS. 7, 8. *Diaprocopia longicauda*, new species (p. 741).

7. Portion of the type zoarium, $\times 12$, showing *Proboscina* form of growth.

8. Another part of the type, $\times 12$, terminating in the *Berenicea* form of growth and bearing an ovicell.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.

Cat. No. 65276, U.S.N.M.

FIGS. 9-11. *Stomatopora polygona*, new species (p. 656).

9. A young zoarium, $\times 12$, growing over a larger species of *Stomatopora*.

10. The same specimen, $\times 25$.

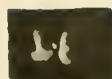
11. An older zoarium, $\times 6$, illustrating the polygons formed by the branches.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.

Cat. No. 65277, U.S.N.M.



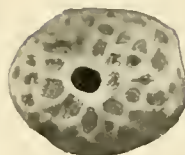
1 x 25



2



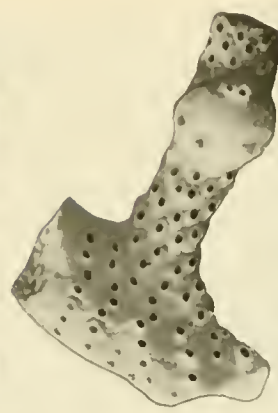
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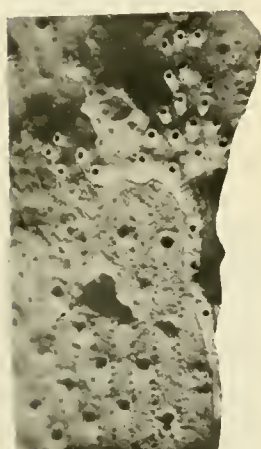
6 x 25



3



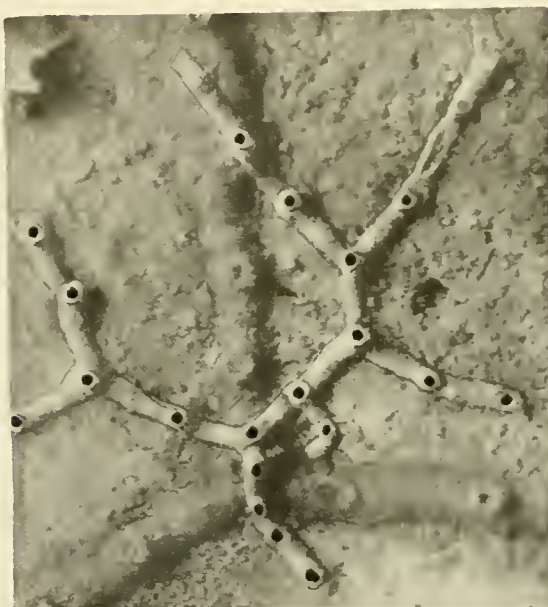
4



7



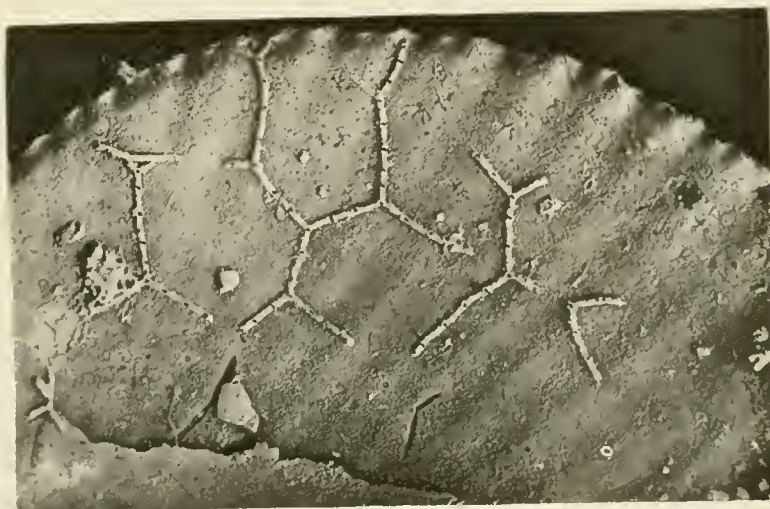
8



10 x 25



9



11 x 6

JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



1 x6



3 x25



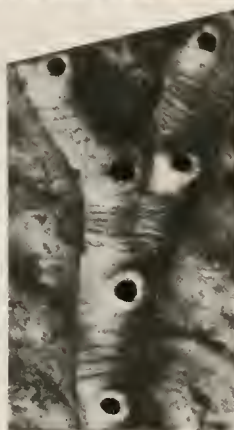
2



7 x25



4



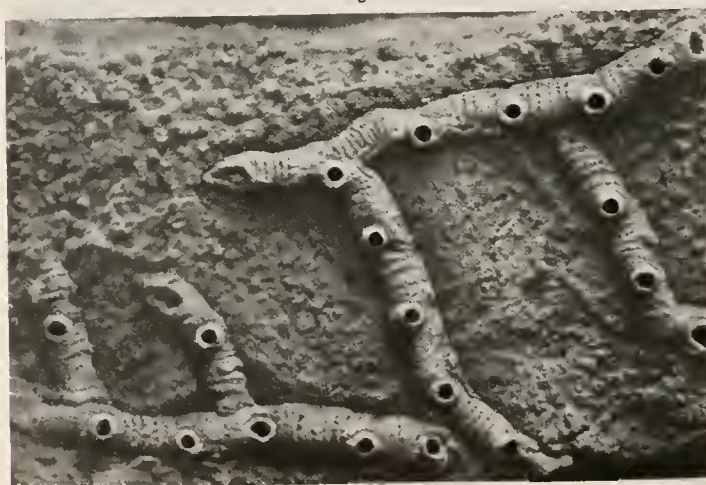
5 x25



8



6



10



11 x25



9 x25

PLATE 116.

FIGS. 1-3. *Stomatopora pratti*, new species (p. 657).

1. A well-developed zoarium, $\times 6$.
2. An unbranched specimen, $\times 12$.
3. Several zooecia, $\times 25$.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.
Cat. No. 65268, U.S.N.M.

FIGS. 4, 5. *Stomatopora striatula*, new species (p. 657).

4. A zoarium, $\times 12$, showing the acute angle of dichotomization.
5. Portion of a zoarium, $\times 25$. The tubes are striated, but the peristomie is almost smooth.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.
Cat. No. 65270, U.S.N.M.

FIGS. 6, 7. *Proboscina projecta*, new species (p. 660).

6. A zoarium, $\times 12$, showing the indistinct, alternately arranged, striated tubes.
7. Several zooecia, $\times 25$, illustrating the round thick peristome.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.
Cat. No. 65271, U.S.N.M.

FIGS. 8, 9. *Proboscina rugosa*, new species (p. 660).

8. View, $\times 12$, illustrating the unsymmetrical zoarium with biserial zooecia.
9. Portion, $\times 25$, showing the pronounced transverse striation.

Middle Jacksonian : Eutaw Springs, South Carolina.
Cat. No. 65272, U.S.N.M.

FIGS. 10, 11. *Stomatopora fasciolata*, new species (p. 658).

10. Zoarium, $\times 12$, exhibiting the wide oval tubes with transverse bands.
11. Portion, $\times 25$, in which the transverse bands are granulated.

Upper Jacksonian (Ocala limestone) : One and one-half miles above Bainbridge,
Georgia.
Cat. No. 65273, U.S.N.M.

PLATE 117.

FIGS. 1-4. *Proboscina idmonoides*, new species (p. 668).

1. The multiserial zoarium, $\times 12$, showing symmetric arrangement.
 2. Branch, $\times 25$, with numerous longitudinal rows of tubes.
 3. 4. Two zoaria, $\times 12$, in which the longitudinal rows are few.
- Upper Jacksonian (Ocala limestone): Old factory, $1\frac{1}{2}$ miles above Bainbridge, Georgia.
Cat. No. 65293, U.S.N.M.

FIG. 5. *Berenicea ingens*, new species (p. 671).

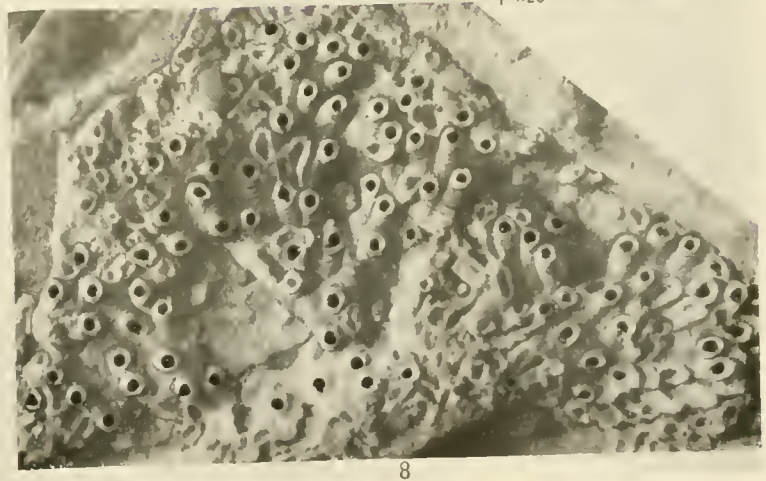
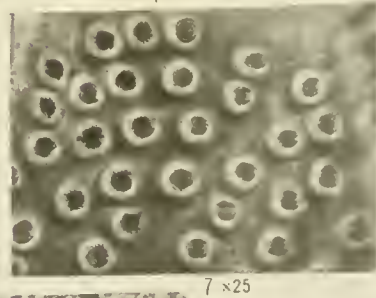
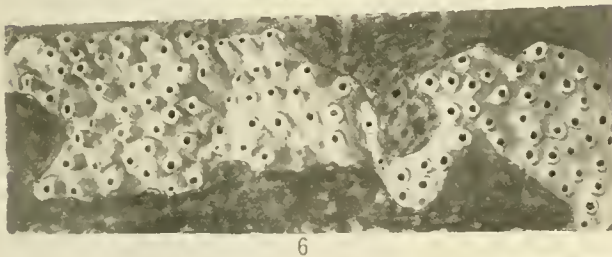
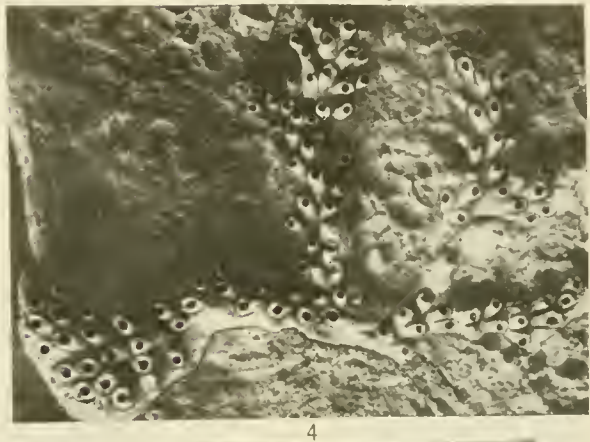
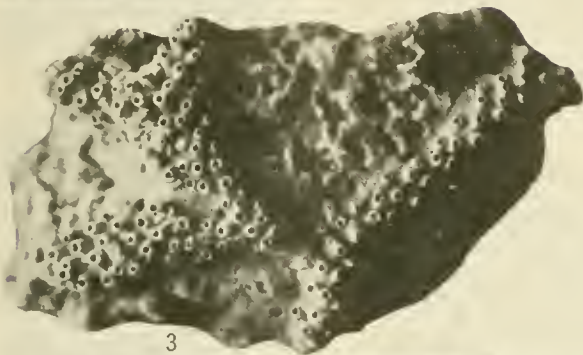
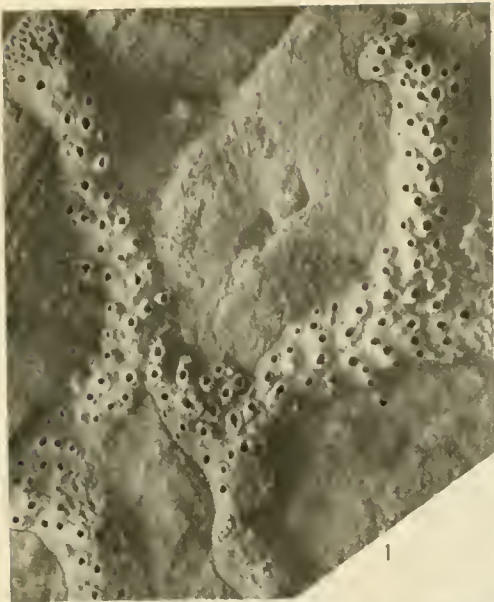
- The flabelliform zoarium, $\times 25$, showing the large tubes.
Lower Jacksonian: Three and one-half miles southeast of Shell Bluff Post Office, Georgia.
Cat. No. 65294, U.S.N.M.

FIGS. 6, 7. *Proboscina magniramosa*, new species (p. 668).

6. The multiserial zoarium, $\times 12$, formed of large undulating branches.
 7. Portion of a branch, $\times 25$.
- Jacksonian (Zeuglodon bed): South side of Suck Creek, Clarke County, Mississippi.
Cat. No. 65295, U.S.N.M.

FIGS. 8, 9. *Berenicea benjamini*, new species (p. 671).

8. The type-specimen, $\times 12$, illustrating the distinct cylindrical tubes.
 9. Part of a branch, $\times 25$.
- Middle Jacksonian: Near Eutaw Springs, South Carolina.
Cat. No. 65296, U.S.N.M.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



1



2 x 25



3



4



6



8 x 25



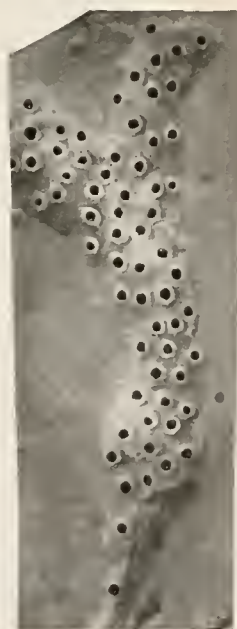
5



10



9 x 25



7



12 x 25



11 x 25

JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 118.

FIGS. 1-6. *Proboscina parviangulata*, new species (p. 664).

1. A well preserved zoarium, $\times 12$, with salient peristomes.
 2. Small portion, $\times 25$.
 3. Biserial zoarium, $\times 12$, having tubes much wrinkled transversally.
 4. An example, $\times 12$, in which the peristomes are broken.
 5. A multiserial specimen, $\times 12$.
 6. Edge of a zoarium, $\times 12$, showing that the tubes are raised almost vertically.
- Middle Jacksonian; Near Lenuds Ferry, South Carolina.
Cat. No. 65289, U.S.N.M.

FIGS. 7-9. *Proboscina crigua*, new species (p. 665).

- 7, 8. The multiserial zoarium, $\times 12$ and a portion $\times 25$.
 9. A short claviform branch. $\times 25$.
- Upper Jacksonian (Ocala limestone); Chipola River, east of Marianna, Jackson County, Florida.
Cat. No. 65290, U.S.N.M.

FIGS. 10-12. *Proboscina latobrevis*, new species (p. 667).

- 10, 11. The type-specimen, $\times 12$ and $\times 25$, showing the short but wide tubes.
- Upper Jacksonian (Ocala limestone); Old factory, $1\frac{1}{2}$ miles above Bainbridge, Georgia.
Cat. No. 65291, U.S.N.M.
12. An example with very short tubes, $\times 25$, referred to this species.
- Vicksburgian (Marianna limestone); Claiborne, Monroe County, Alabama.
Cat. No. 65292, U.S.N.M.

PLATE 119.

FIGS. 1, 2. *Proboscina claratula*, new species (p. 663).

1. A complete example, $\times 6$, showing the zoarial aspect.

2. A branch, $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65284, U.S.N.M.

FIGS. 3, 4. *Proboscina undulata*, new species (p. 664).

3. The quadriserial zoarium, $\times 12$.

4. Portion of the same specimen, $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65285, U.S.N.M.

FIGS. 5-8. *Proboscina striatula*, new species (p. 663).

5. The bifurcating zoarium, $\times 12$, with triserial zooecia.

6. Part of a branch, $\times 25$. The tubes are visible and striated.

Middle Jacksonian: Eutaw Springs, South Carolina.

Cat. No. 65286, U.S.N.M.

7. Another specimen, $\times 12$.

8. Part of the same, $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65287, U.S.N.M.

FIGS. 9-11. *Proboscina prominens*, new species (p. 664).

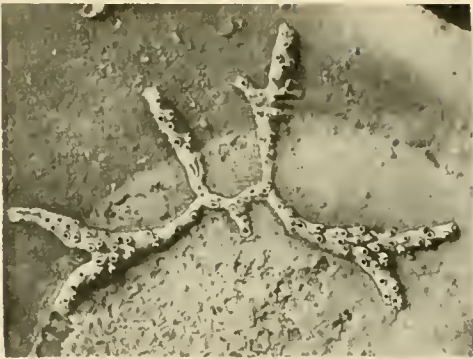
9. Zoarium, $\times 12$, showing triserial arrangement of zooecia.

10. Part of a branch, $\times 25$. The tubes are indistinct. The wrinkles cover the surface of the zoarium but the peristomie is not striated.

11. Another zoarium, $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

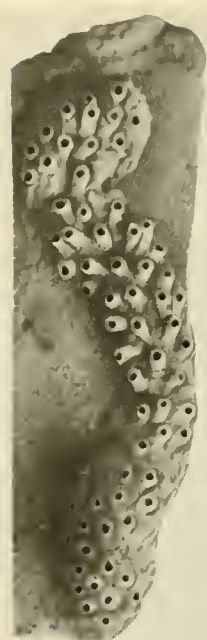
Cat. No. 65288, U.S.N.M.



1 x6



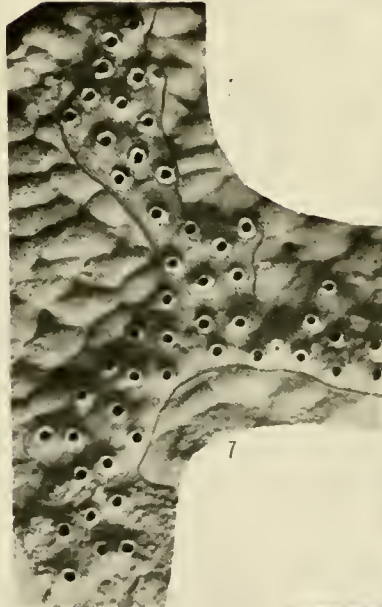
2 x25



3



5



7



4 x25



11 x25



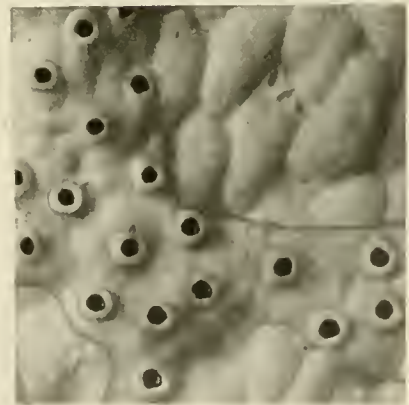
6 x25



9



10 x25



8 x25

JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



1



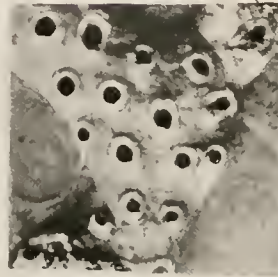
4



3 x25



2



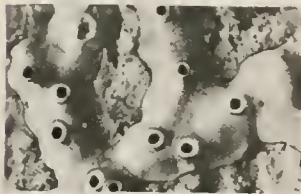
8 x25



6 x25



5



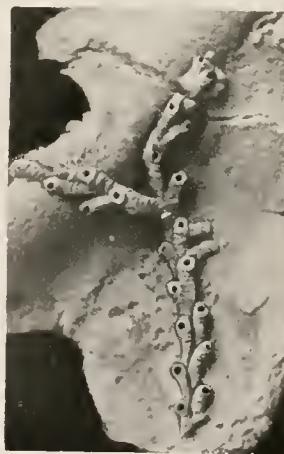
9



7



10 x25



11



12 x25



13 x25

JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 120.

FIGS. 1-3. *Proboscina geminata*, new species (p. 661).

1. Edge view of a zoarium, $\times 12$.

2, 3. Another specimen, $\times 12$ and $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65278, U.S.N.M.

FIGS. 4-6. *Proboscina anceps*, new species (p. 661).

4. Branch with biserial zooecia, $\times 12$.

5. A monoserial branch, $\times 12$.

6. Portion of the same specimen, $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65279, U.S.N.M.

FIGS. 7, 8. *Proboscina colubra*, new species (p. 663).

7. The type-specimen, $\times 12$, illustrating triserial arrangement of zooecia.

8. A portion, $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65280, U.S.N.M.

FIGS. 9, 10. *Proboscina exspatiata*, new species (p. 661).

9. Zoarium, $\times 12$, showing width of branches.

10. A portion, $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65281, U.S.N.M.

FIGS. 11, 12. *Proboscina alternata*, new species (p. 662).

11. Type-specimen, $\times 12$, showing biserial arrangement of tubes.

12. Portion, $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65282, U.S.N.M.

FIG. 13. *Proboscina divergens*, new species (p. 662).

The biserial zoarium, $\times 25$, showing the small tubes.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Jackson County, Florida.

Cat. No. 65283, U.S.N.M.

PLATE 121.

FIGS. 1-7. *Plagioccia diragans*, new species (p. 712).

1. A zoarium, $\times 12$, with very thick zone of growth.

2. Very young zoarium, $\times 12$.

Vicksburgian: Three miles southeast of Vossburg, Jasper County, Mississippi.

Cat. No. 65297, U.S.N.M.

3. A flabelliform zoarium, $\times 12$. The zone of growth is thick but little expanded.

4. Portion of figure 3, $\times 25$.

5. Compound zoarium, $\times 12$, incrusting the radicells of an alga. Many sub-colonies are visible.

6. Portion of the zoarium of figure 5, $\times 25$. Numerous closed zooecia are present.

7. Zoarium with thick zone of growth, $\times 25$. The peristomes are elliptical and approach each other on the zoarial margins.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65298, U.S.N.M.

FIG. 8. *Diastopora tubiformis*, new species (p. 673).

The hollow cylindrical zoarium, $\times 12$.

Middle Jacksonian: Near Lenud's Ferry, South Carolina.

Cat. No. 65299, U.S.N.M.

FIG. 9. *Diastopora striatiscemota*, new species (p. 674).

Zoarium, $\times 25$, a wide expanded frond.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Jackson County, Florida.

Cat. No. 65300, U.S.N.M.

FIGS. 10, 11. *Berniccia incondita*, new species (p. 672).

10. The incrusting zoarium, $\times 12$, of wide irregular lobes.

11. View of same, $\times 25$. The tubes are arranged in quincunx.

Middle Jacksonian: Rich Hill, $5\frac{1}{2}$ miles southeast of Knoxville, Georgia.

Cat. No. 65301, U.S.N.M.

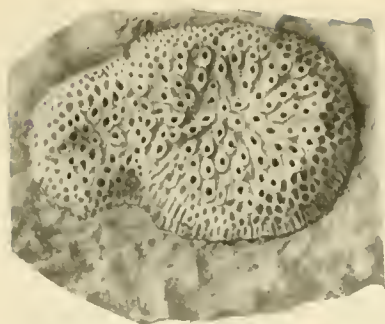
FIGS. 12, 13. *Diaperoccia jacksonensis*, new species (p. 742).

12. The incrusting zoarium, $\times 12$, composed of claviform branches.

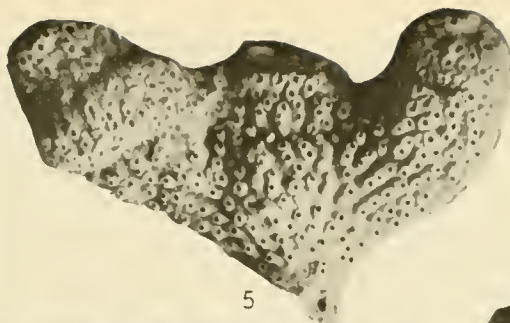
13. View of the same, $\times 25$.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

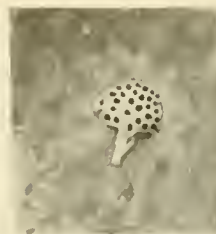
Cat. No. 65302, U.S.N.M.



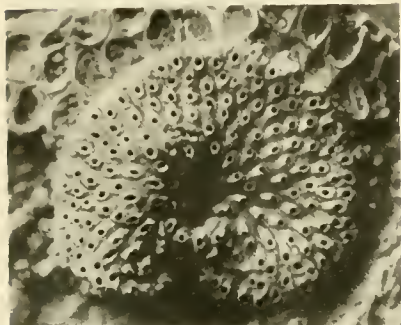
1



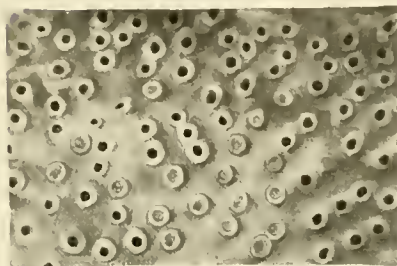
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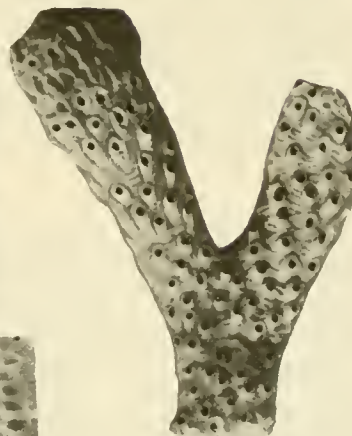
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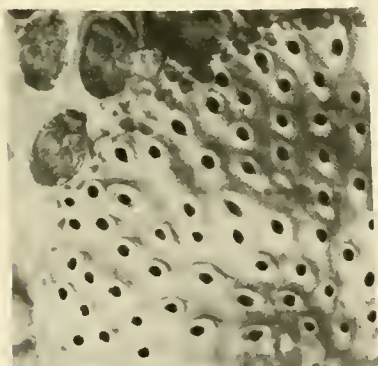
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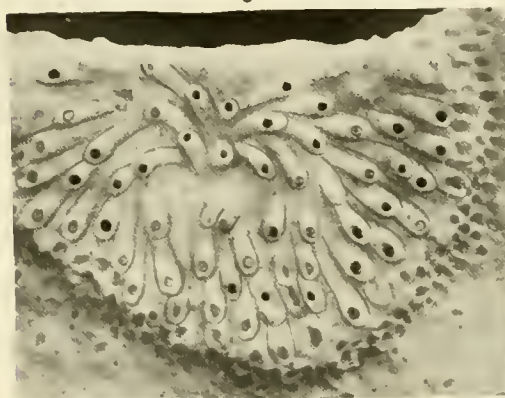
6 x 25



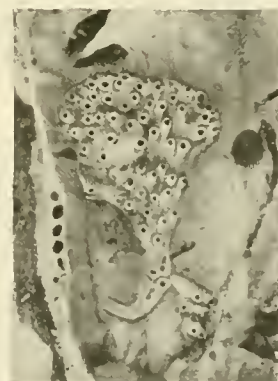
8



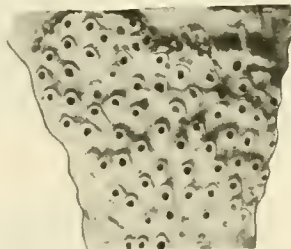
4 x 25



7 x 25



12



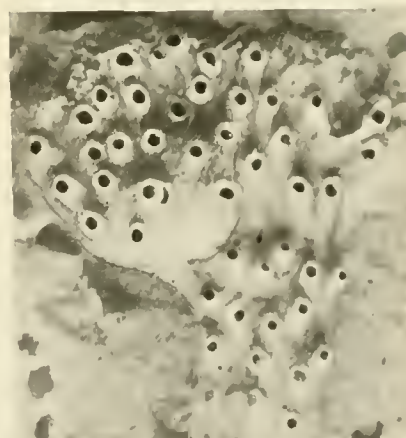
10



9 x 25



11 x 25



13 x 25



1



2 x 25



3



5



8



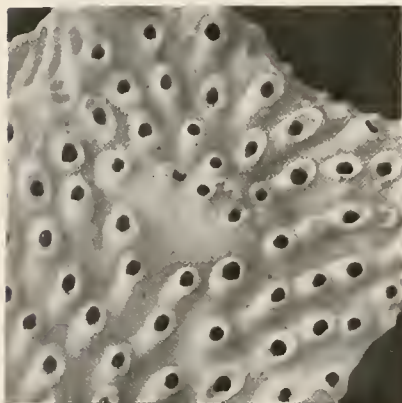
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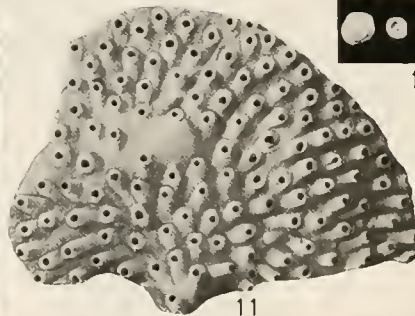
4 x 25



6



13 x 25



11



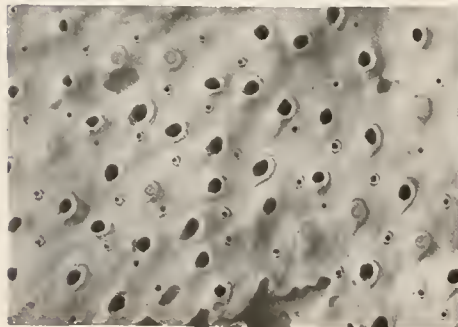
10



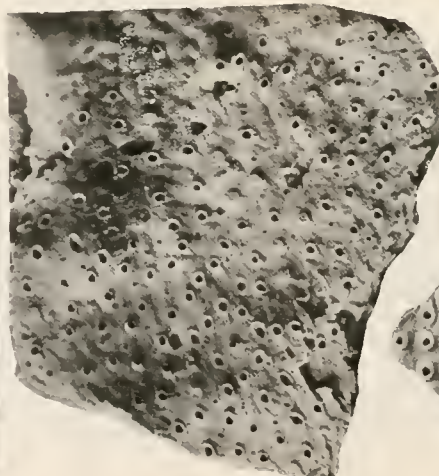
14



7



16 x 25



15



12

JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 122.

FIGS. 1-7. *Diaperoccia lobulata*, new species (p. 742).

1. An incrusting symmetrical zoarium. $\times 12$.
Middle Jacksonian: Rich Hill, Crawford County, Georgia.
Cat. No. 65426, U.S.N.M.
2. Another zoarium, $\times 25$, with protoecium broken.
- 3, 4. A specimen showing the ovicell and ancestrula. $\times 12$, and portion, $\times 25$.
- 5, 6. Two zoarial aspects, $\times 12$.
7. An elongated lobe, $\times 12$, showing three successive ovicells.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina
Cat. No. 65427, U.S.N.M.

FIGS. 8, 9. *Diaperoccia lobulata parripora*, new variety (p. 743).

8. The incrusting zoarium with small peristomes, $\times 12$.
9. Portion of the same, $\times 25$, showing the phenomenon of rejuvenescence.
Middle Jacksonian: Near Lenuds Ferry, South Carolina.
Cat. No. 65428, U.S.N.M.

FIGS. 10-13. *Plagioccia lamellosa*, new species (p. 714).

10. Group of the unilamellar zoaria, natural size.
11. Specimen with the ovicell not parallel to the zoarial margins, $\times 12$.
- 12, 13. Zoarium with incomplete ovicell, $\times 12$ and portion, $\times 25$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 65429, U.S.N.M.

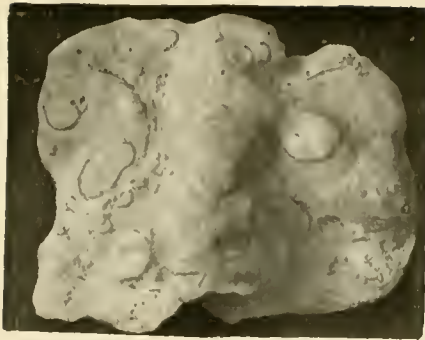
FIGS. 14-16. *Diplosolen planum*, new species (p. 747).

14. The free bilamellar zoarium, natural size.
15. Photograph of the type-specimen, $\times 12$.
16. Surface, $\times 25$, showing the rather indistinct tubes and tubules.
Middle Jacksonian: Near Lenuds Ferry, South Carolina.
Cat. No. 65430, U.S.N.M.

PLATE 123.

FIGS. 1-14. *Plagioccia concerta*, new species (p. 711).

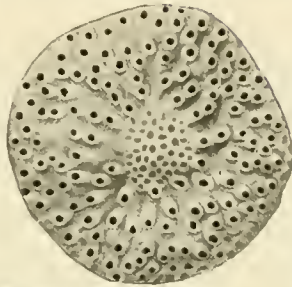
- 1, 2. The unilamellar zoarium, natural size and $\times 3$, composed of aggregated subcolonies.
 3. A simple zoarium, $\times 12$, with large zone of growth.
 4. Basal lamella of the same zoarium, $\times 12$.
 - 5, 6. Simple zoarium, $\times 12$, and portion, $\times 25$. At the center of the zone of growth a new zoarium is superposed. Many tubes are closed by calcareous lamellae (septa).
 7. Zoarium, $\times 6$, composed of many superposed subcolonies arranged in *Domopora* form of growth.
 8. Lower side of a zoarium, $\times 6$, composed of two superposed subcolonies.
 9. Interior obtained by the wearing away of the basal lamella, $\times 12$.
 10. Median section through a simple zoarium, $\times 25$.
 11. Simple zoarium with two ovicells, $\times 12$.
 12. Portion of a zoarium with an incomplete ovicell, $\times 25$.
 13. Fragment of zoarium, $\times 25$, showing marginal tubes in radial rows.
 14. Longitudinal section through a zoarium formed of superposed subcolonies, $\times 25$.
- Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.
Upper Jacksonian (Ocala limestone) : Chipola River, east of Marianna, Florida.
Cat. Nos. 65303, 65476, U.S.N.M.



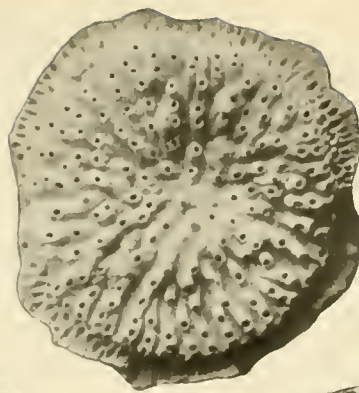
2 x 3



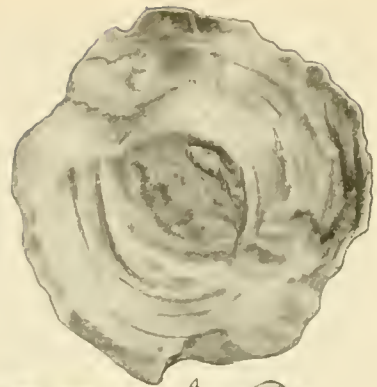
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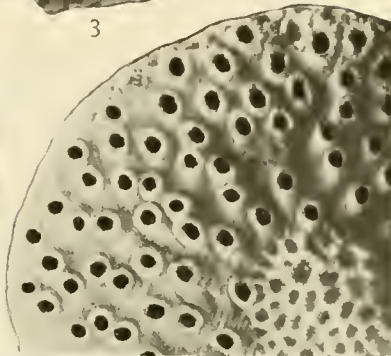
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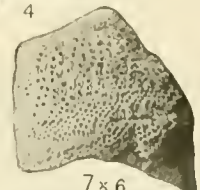
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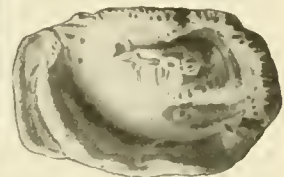
4



6 x 25



7 x 6



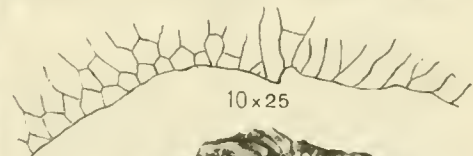
8 x 6



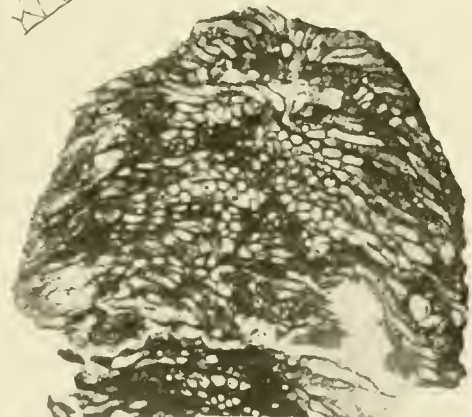
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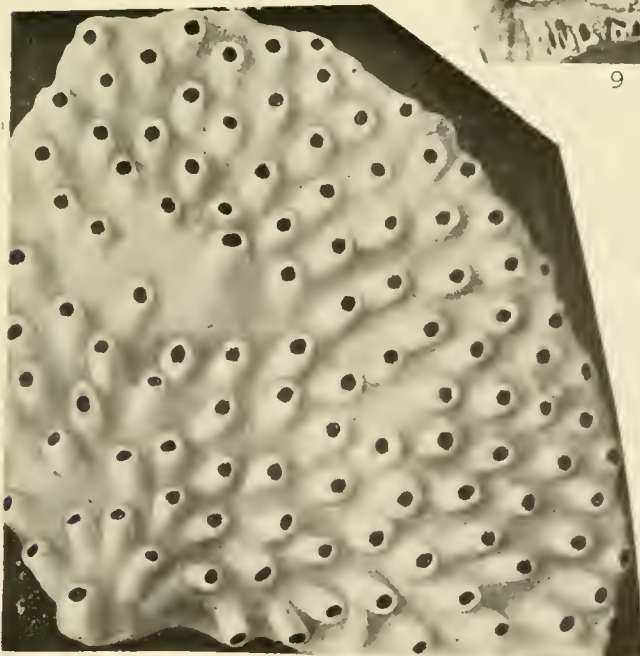
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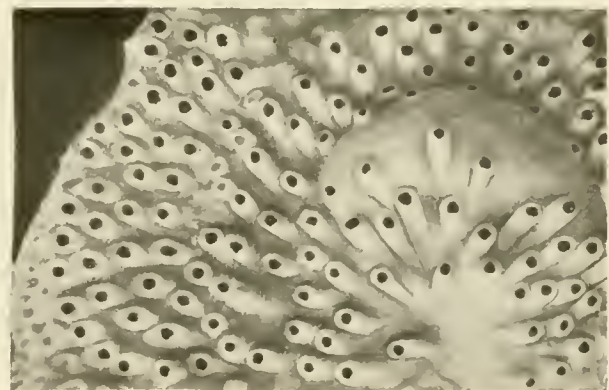
10 x 25



14 x 25

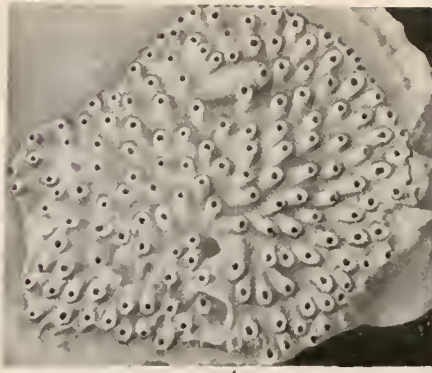


12 x 25

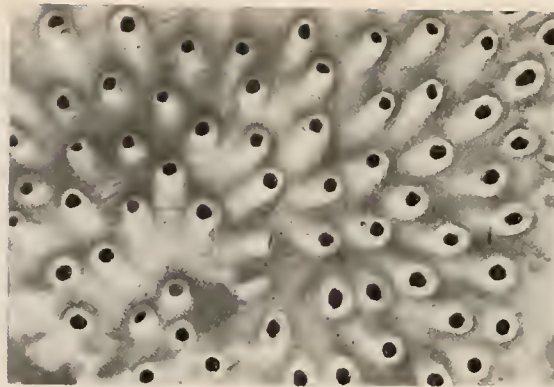


13 x 25

JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



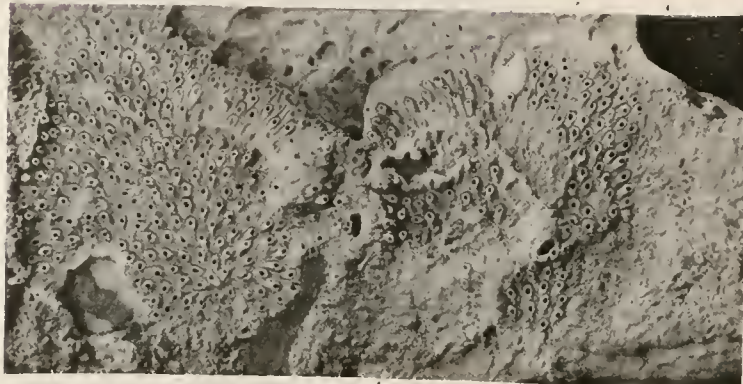
1



2 x25



3



4



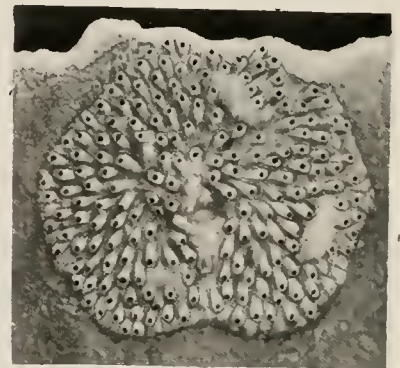
6 x25



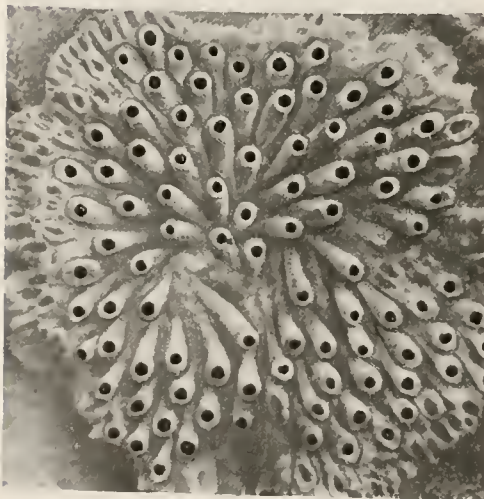
8 x25



5 x25



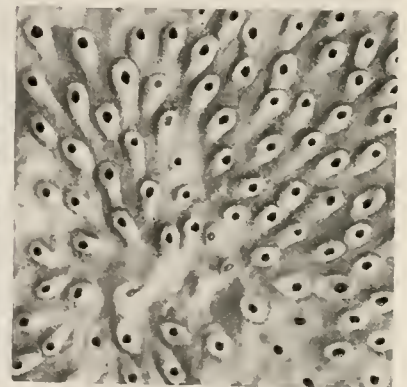
7



9 x25



10



11 x25

JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 124.

FIGS. 1, 2. *Plagioccia botula*, new species (p. 714).

1. The discoid incrusting zoarium, $\times 12$.
2. Portion, $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 65304, U.S.N.M.

FIGS. 3-11. *Plagioccia hirta*, new species (p. 715).

3. A specimen, $\times 12$, in which the ovicell is deformed by the zoarium curving about a narrow substratum.

Middle Jacksonian: Rich Hill, $5\frac{1}{4}$ miles south of Knoxville, Georgia.
Cat. No. 65305, U.S.N.M.

4. Two neighboring zoaria, $\times 12$, developed without superposition.
5. Weathered zoarium, $\times 25$.

Upper Jacksonian (Ocala limestone): Near Bainbridge, Georgia.
Cat. No. 65306, U.S.N.M.

6. Zoarium with a single ovicell, $\times 25$. The peristome of the tubes is very salient.
7. Zoarium with three ovicells, $\times 12$.
8. A portion of fig. 7, $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 65307, U.S.N.M.

9. Zoarium with rectilinear tubes, $\times 25$. The zone of growth is well developed and the peristome is large.

10. An ovicelled zoarium, $\times 12$.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Jackson County, Florida.

Cat. No. 65308, U.S.N.M.

11. Central portion of a large zoarium, $\times 25$, presenting some poorly developed concentric wrinkles.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 65477, U.S.N.M.

PLATE 125.

FIGS. 1-8. *Plagioccia marginata*, new species (p. 716).

1. Fragments as usually found, natural size.
2. Nearly complete bushy zoarium, natural size.
3. Unilamellar zoarium, $\times 12$.
4. Fragment of a zoarium, $\times 12$, in which the tubes are wrinkled transversely.
5. Zoarium preserved by a lamella of *Floridina*, $\times 12$. The long peristome of the tubes is completely preserved.
6. Transverse section, $\times 25$, showing the two lamellae.
7. Surface of a bilamellar zoarium, $\times 25$.
8. Fragment, $\times 12$, with ovicell.

Middle Jacksonian: Lenuds Ferry and Eutaw Springs, South Carolina.

Cat. Nos. 65309, 65310, U.S.N.M.

FIGS. 9-11. *Desmeplagioecia dichotoma*, new species (p. 719).

9. Zoarium, $\times 6$, preserving the very small protoecium.
10. An ovicelled branch, $\times 12$.
11. Zoarium, $\times 25$.

Upper Jacksonian (Ocala limestone): Old factory near Bainbridge, Georgia.

Cat. No. 65311, U.S.N.M.

FIGS. 12-15. *Desmeplagioecia plicata*, new species (p. 720).

12. Bilamellar fragment, $\times 6$, with zoarial form of *Reticulipora*. The zone of growth is large.
13. Opposite side of the same specimen, $\times 6$, showing fascicles opposite.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65313, U.S.N.M.

14. Bilamellar fragment, $\times 12$, with large zone of growth.
15. Unilamellar zoarium, $\times 12$.

Middle Jacksonian: Near Lenuds Ferry, South Carolina.

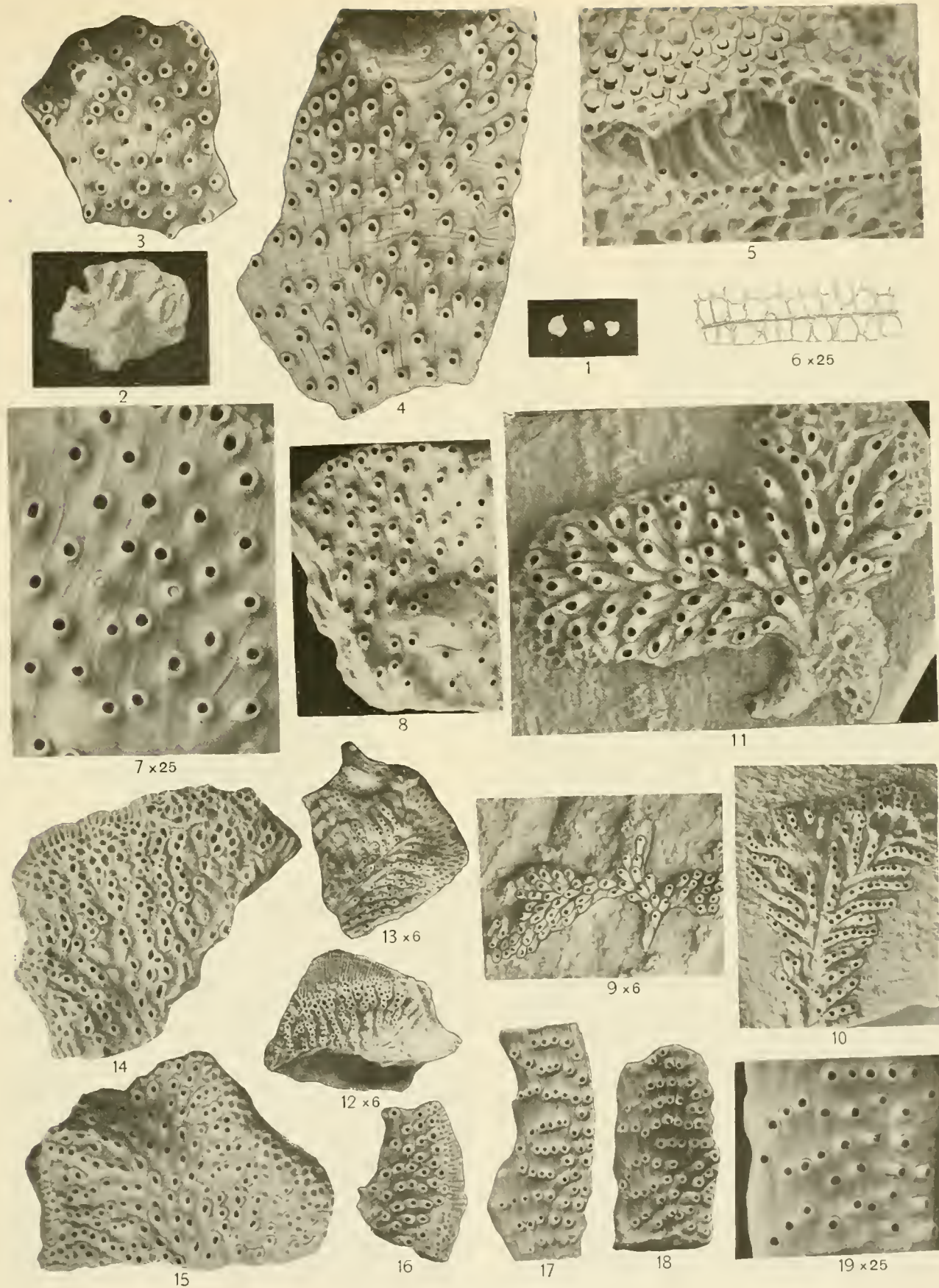
Cat. No. 65314, U.S.N.M.

FIGS. 16-19. *Desmeplagioecia compressa*, new species (p. 719).

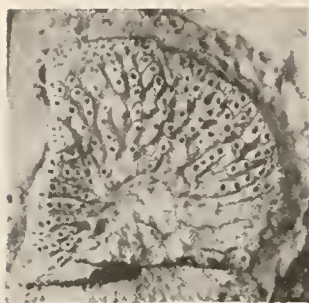
16. Young branch, $\times 12$, without fascicles but with large zone of growth.
- 17, 18. Two branches showing the irregularity of the fascicles, $\times 12$.
19. Surface, $\times 25$.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Jackson County, Florida.

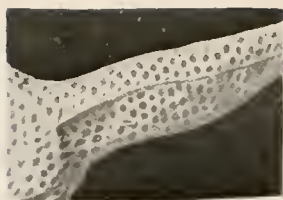
Cat. No. 65315, U.S.N.M.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



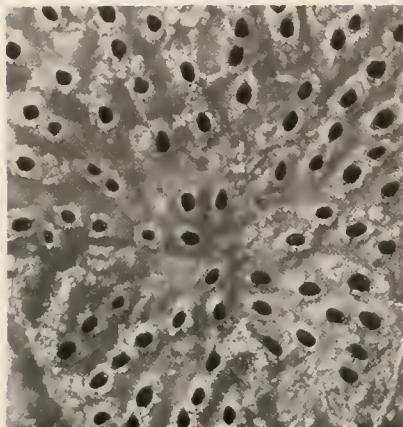
1x6



7



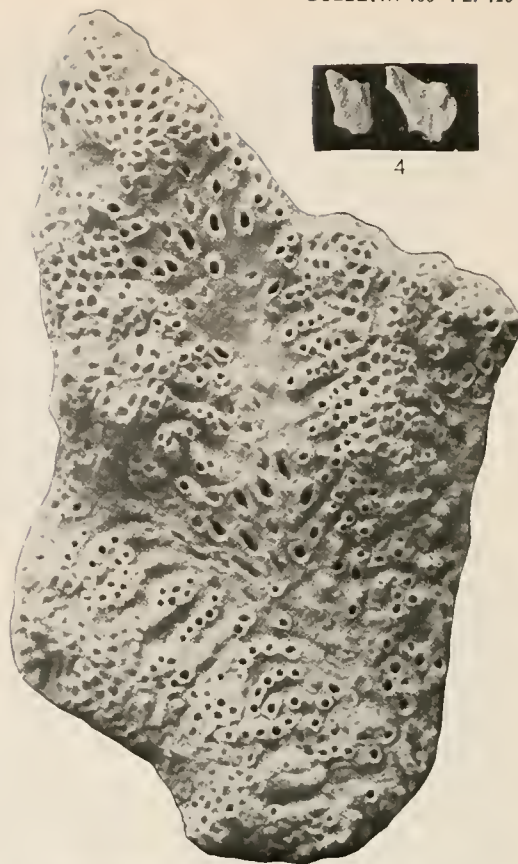
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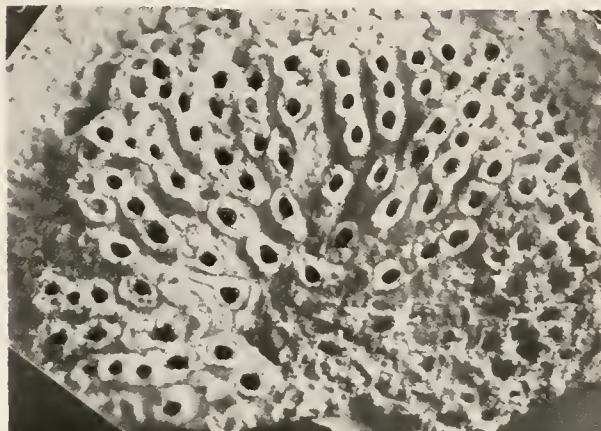
2x25



5x6



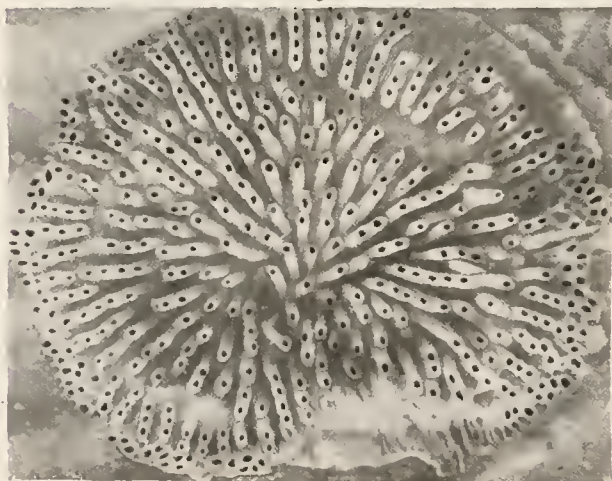
6



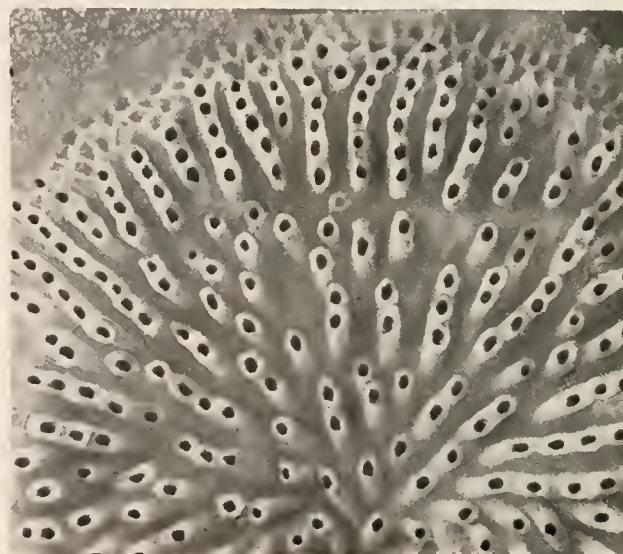
3x25



8x6



9



10x25

PLATE 126.

FIGS. 1-3. *Desmeplagioccia brevis*, new species (p. 720).

1. An incrusting incomplete orbicular zoarium. $\times 6$.
2. Surface of a weathered fragment, $\times 25$.
3. An entire zoarium, $\times 25$, somewhat weathered.

Upper Jacksonian (Ocala limestone): Old factory, near Bainbridge, Georgia.

Cat. No. 65316, U.S.N.M.

FIGS. 4-7. *Desmeplagioccia lobata*, new species (p. 719).

4. Two examples of the free bilamellar zoarium, natural size.
- 5, 6. Zoarium, $\times 6$ and $\times 12$, showing the short fascicles and the thick tubes in the vicinity of the zoarial margins.
7. Zone of growth, $\times 12$, showing the symmetrical arrangement on each side of the basal lamella.

Middle Jacksonian: Near Entaw Springs, South Carolina.

Cat. No. 65317, U.S.N.M.

FIGS. 8-10. *Desmeplagioccia tenuissima*, new species (p. 721).

8. An incrusting zoarium, $\times 6$.

Upper Jacksonian (Ocala limestone): Old factory, near Bainbridge, Georgia.

Cat. No. 65318, U.S.N.M.

- 9, 10. An entire discoidal zoarium, $\times 12$ and portion $\times 25$. The ovicell is little convex.

Upper Jacksonian (Ocala limestone): Chipola River east of Marianna, Jackson County, Florida.

Cat. No. 65319, U.S.N.M.

PLATE 127.

FIGS. 1-7. *Mecynoccia cylindrica*, new species (p. 727).

1. Fragments of the cylindrical bifurcated zoarium, natural size.
2. Ovicelled specimen, $\times 12$. The oeciostome is elliptical.
3. Specimen with broken ovicell, $\times 12$, showing its formation anterior to the calcification of the adjacent tubes which are altered and disarranged.
4. Normal example, $\times 12$. The zone of growth is small; the tubes are margined.
5. Surface of the same, $\times 25$.
6. Remarkable specimen, $\times 12$, showing the extraordinary variations in the distance of the peristomes.
7. Longitudinal thin section, $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65465, U.S.N.M.

FIGS. 8-18. *Mecynoccia brevis*, new species (p. 728).

8. Branches, natural size.
9. Branch with short ovicell, $\times 12$. The zone of growth is little prominent and rounded.
10. Other side of the same specimen, $\times 12$.
11. Interior of the ovicell showing the disarrangement of the tubes caused by the anterior formation of the ovicell.
12. Branch with short ovicell, $\times 12$.

Jacksonian (Zeuglodon zone): Shubuta, Mississippi.

Cat. No. 65466, U.S.N.M.

- 13, 14. A compressed fragment with salient peristomes and the zone of growth visible, $\times 12$ and $\times 25$.

Middle Jacksonian, 18 miles west of Wrightsville, Georgia.

Cat. No. 65467, U.S.N.M.

- 15, 16. Fragment with the tubes arranged in transverse rows, $\times 12$ and $\times 25$.

Jacksonian (Zeuglodon zone): Suck Creek, Clark County, Mississippi.

Cat. No. 65468, U.S.N.M.

- 17, 18. Much compressed fragment branching irregularly, $\times 12$ and $\times 25$.

Middle Jacksonian: Rich Hill, Crawford County, Georgia.

Cat. No. 65469, U.S.N.M.

FIGS. 19-22. *Mecynoccia pusilla*, new species (p. 728).

- 19, 20. The small zoarium, $\times 12$ and $\times 25$.

Middle Jacksonian: Near Lenuds Ferry, South Carolina.

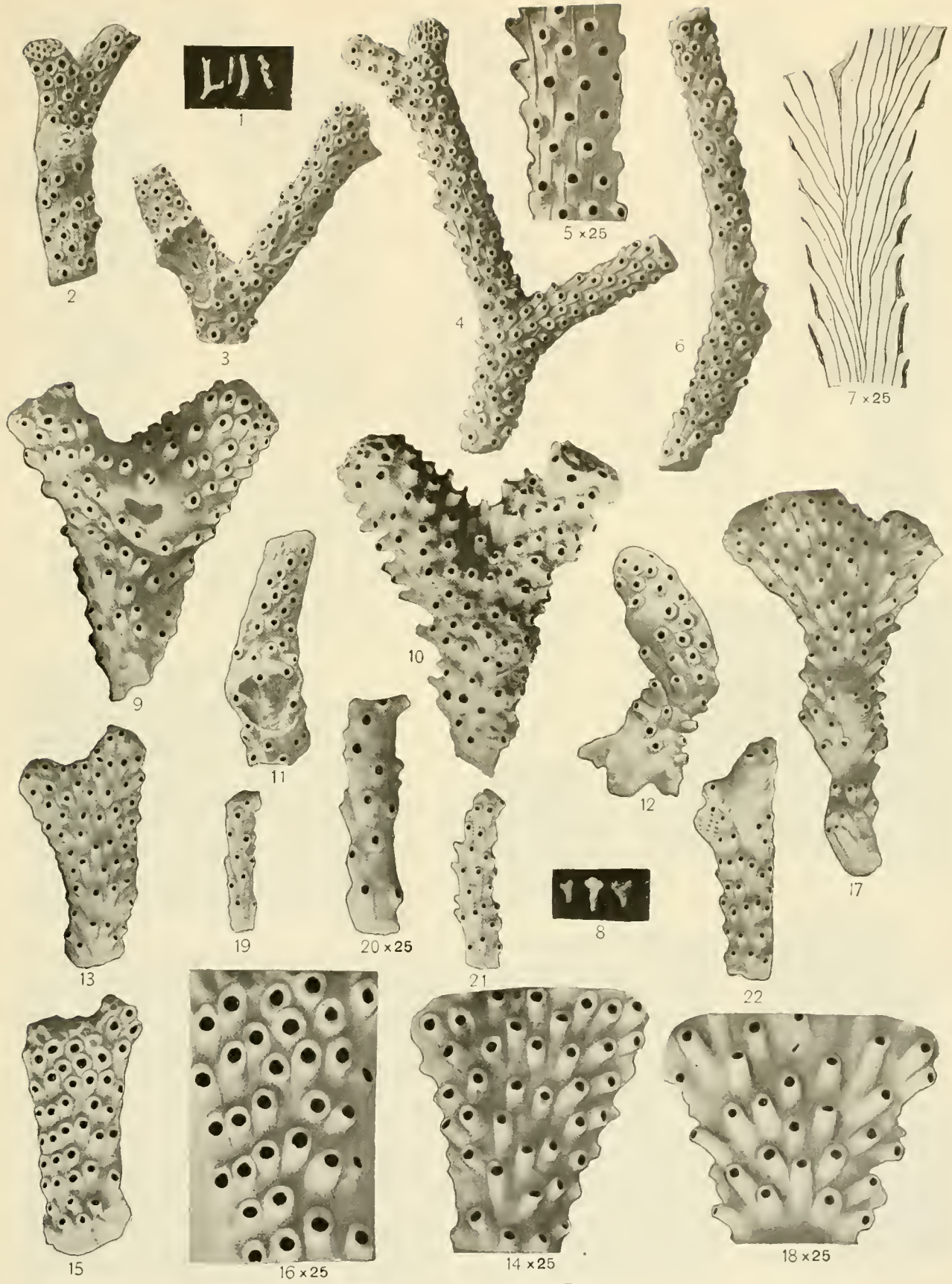
Cat. No. 65470, U.S.N.M.

21. Another fragment, $\times 12$.

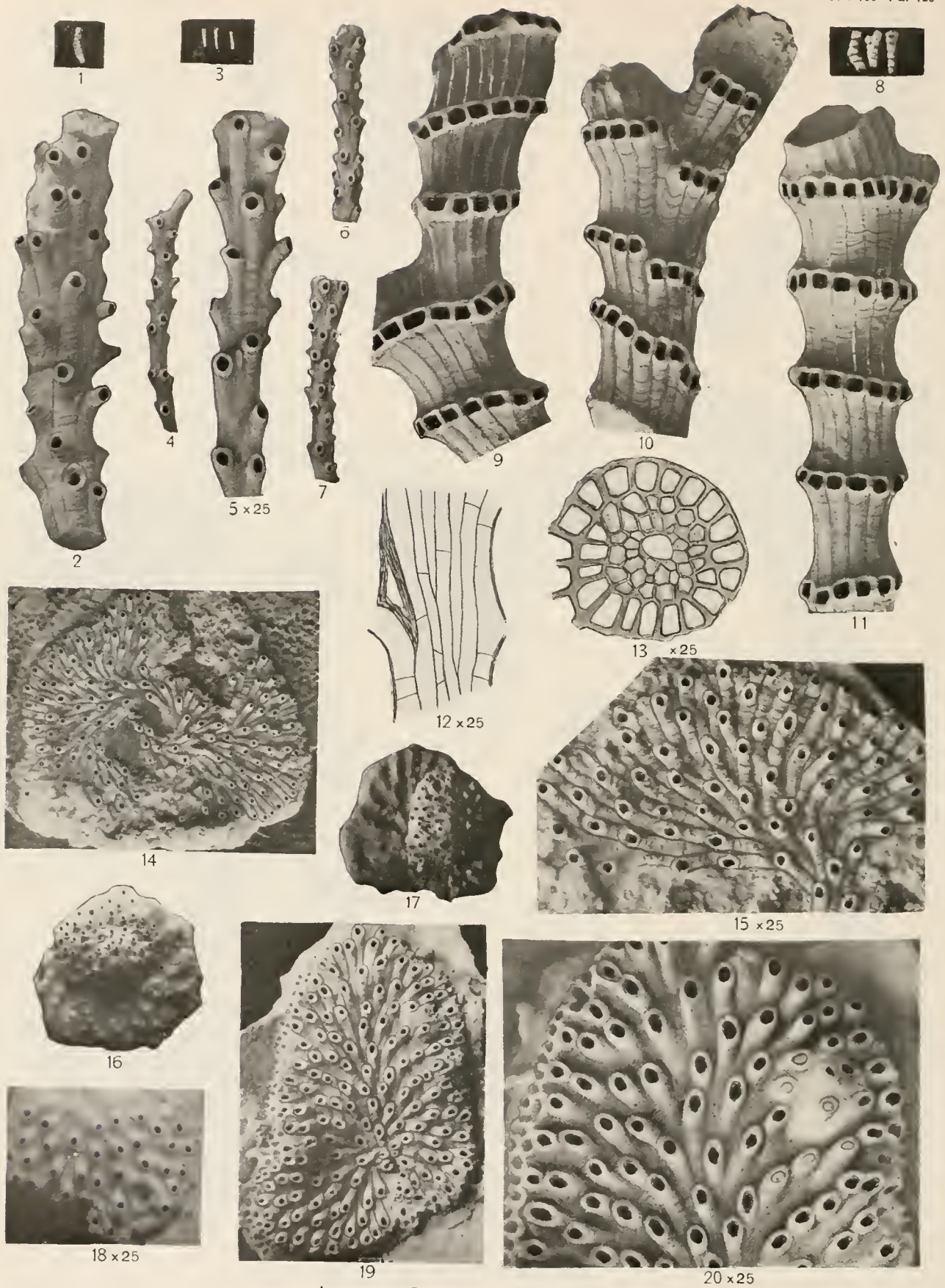
22. Specimen, $\times 12$, showing the large ovicell.

Middle Jacksonian: Three and one-half miles north of Grovania, Georgia.

Cat. No. 65471, U.S.N.M.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 128.

FIGS. 1, 2. *Mecynocella magnicella*, new species (p. 729).

The cylindrical type-specimen, natural size and $\times 12$, showing the characteristic large tubes and thick peristomes.

Upper Jacksonian (Ocala limestone): Alachua, Florida.

Cat. No. 65320, U.S.N.M.

FIGS. 3-7. *Mecynocella parrituba*, new species (p. 733).

3. Fragments of the narrow cylindrical zoarium, natural size.

4, 5. A fragment showing the narrowed base of a branch at the bifurcation, $\times 12$ and $\times 25$.

6, 7. Two fragments with small tubes, $\times 12$.

Vicksburgian (Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 65321, U.S.N.M.

FIGS. 8-13. *Spiropora majuscula*, new species (p. 675).

8. Three fragments, natural size.

9, 10, 11. Views of the same specimens, $\times 12$.

12. Longitudinal thin section, $\times 25$.

13. Transverse thin section, $\times 25$, showing the irregularity of the internal walls.

Middle Jacksonian: Near Lenuds Ferry, South Carolina.

Cat. No. 65322, U.S.N.M.

FIGS. 14-18. *Microccia vibrio*, new species (p. 736).

14, 15. Completely developed zoarium with serpentiform tubes, $\times 12$ and $\times 25$.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 65486, U.S.N.M.

16, 17, 18. Young-ovicelled zoaria, $\times 12$ and a portion $\times 25$. The tubes are rectilinear.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Jackson County, Florida.

Cat. No. 65323, U.S.N.M.

FIGS. 19, 20. *Microccia flabellata*, new species (p. 735).

The flabellate incrusting ovicelled zoarium, $\times 12$ and $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65324, U.S.N.M.

PLATE 129.

FIGS. 1-11. *Lichenopora grignonensis* Milne-Edwards, 1838 (p. 818).

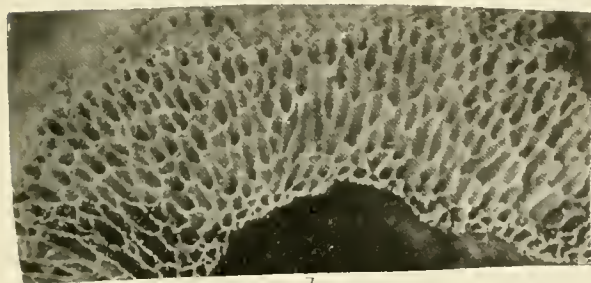
1. Various aspects of the zoarium, $\times 6$.
2. An entire zoarium, $\times 12$.
3. An ovicelled specimen, $\times 12$. The ovicell is more or less covered with cancelli.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 65259, U.S.N.M.
4. A composite incrusting zoarium, $\times 5$.
5. Another composite zoarium incrusting an alga, $\times 5$.
6. Surface of the same zoarium, $\times 12$.
7. Section through the same zoarium, $\times 12$.
Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 65260, U.S.N.M.
8. Tangential thin section, $\times 25$, obtained by the ablation of the basal lamella.
9. Median section through an ovicelled specimen, $\times 25$.
10. Another median section through an ovicelled specimen, $\times 25$.
11. Portion of an ovicelled example, $\times 12$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 65259, U.S.N.M.



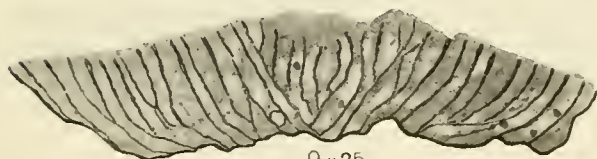
1 x 6



4 x 5



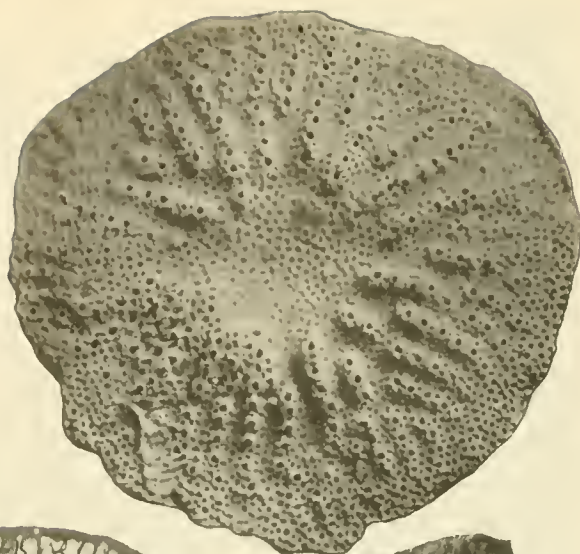
7



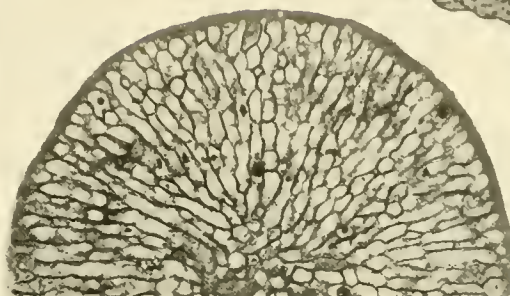
9 x 25



10 x 25



2



8 x 25



3



5 x 5



11

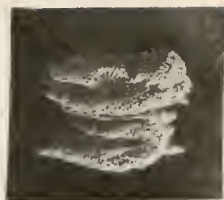


6

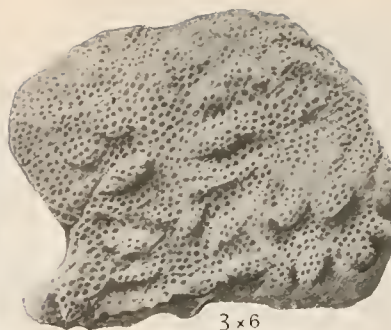
JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



1



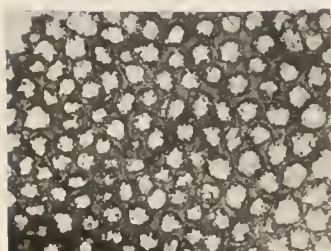
2 x 3



3 x 6



13



5 x 25



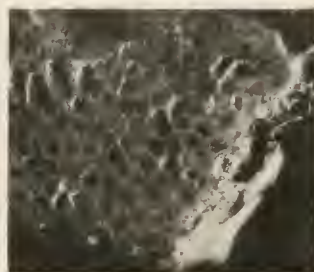
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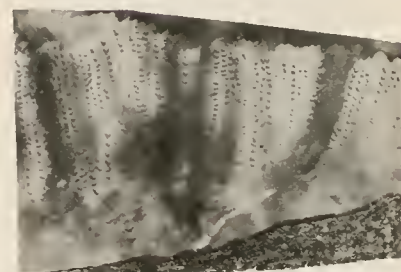
12



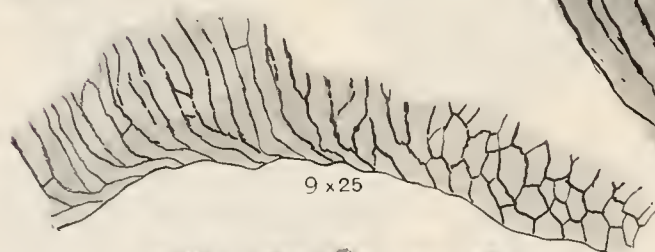
6



7



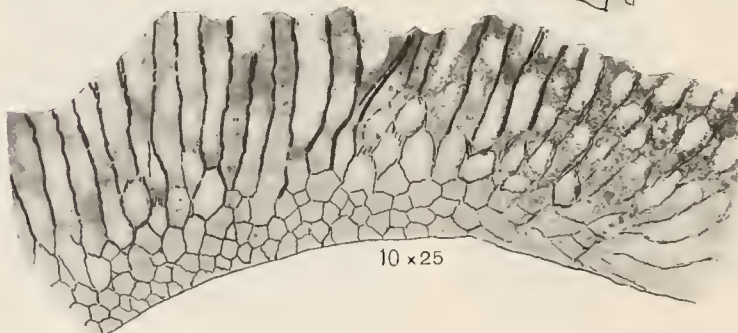
8 x 25



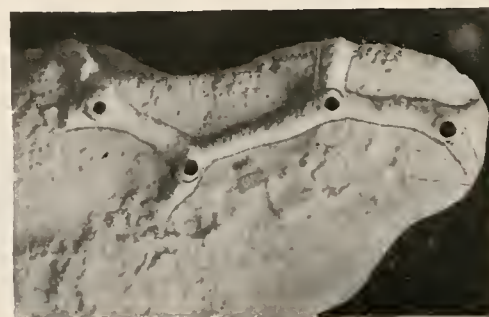
9 x 25



11 x 25



10 x 25



14 x 25

JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 130.

FIGS. 1-11. *Lichenopora boletiformis* Reuss, 1869 (p. 813).

1. A compound zoarium, natural size.
2. Edge view of a compound zoarium, $\times 3$.
3. Dorsal surface of a specimen, $\times 6$.
4. Lower face of a composite zoarium, $\times 6$.
5. Tangential thin section showing the spinules in the cancelli, $\times 25$.
6. Surface of zoarium, $\times 12$. The fascicles are little distinct.
7. Section, $\times 12$, showing the arrangement of the tubes on the basal lamella. The tubes are polygonal and not fusiform.
8. Longitudinal section, $\times 25$, showing the spinules in the cancelli.
9. Longitudinal thin section, $\times 12$, passing through cancelli to the right and through a fascicle to the left. The cancelli are oriented differently from the tubes.
10. Median (longitudinal) thin section, $\times 25$, between the fascicles. The inferior cancelli have a different direction from the superior ones.
11. Median thin section, $\times 25$, through the fascicles.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65453, U.S.N.M.

FIGS. 12, 13. *Lichenopora verrucosa* Phillips, 1843 (p. 818). (See also Plate 131, figs. 10-13.)

- 12, 13. Anterior face of a zoarium, $\times 6$, and $\times 12$, with salient fascicles and a central elliptical area.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65454, U.S.N.M.

FIG. 14. *Stomatopora cornu*, new species (p. 657).

Zoarium, $\times 25$, showing the club-shaped tubes.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Jackson County, Florida.

Cat. No. 65455, U.S.N.M.

PLATE 131.

FIGS. 1-7. *Ismidrouca maxillaris* Lonsdale, 1845 (p. 785).

1. A group of the linear, more or less distorted branches, natural size.
2. Frontal of a branch, $\times 12$, showing two tubes to each fascicle.
3. A distorted branch, $\times 12$, exhibiting base, frontal, and profile.
4. Dorsal, $\times 25$, showing the striae of the firmatopores.
5. Tangential section of the dorsal, $\times 25$, showing the spindles of the firmatopores.
6. Normal transverse section, $\times 25$.
7. Longitudinal section, $\times 25$.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.

Cat. No. 65360, U.S.N.M.

FIGS. 8, 9. *Stomatopora parvipora*, new species (p. 655).

8. Zoarium, $\times 12$. The irregularity of the zoarium appears to be due to the uneven substratum.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.

Cat. No. 65361, U.S.N.M.

9. Zoarium, $\times 25$, preserving the orbicular protoecium.

Lower Jacksonian (Moodys marl) : Jackson, Mississippi.

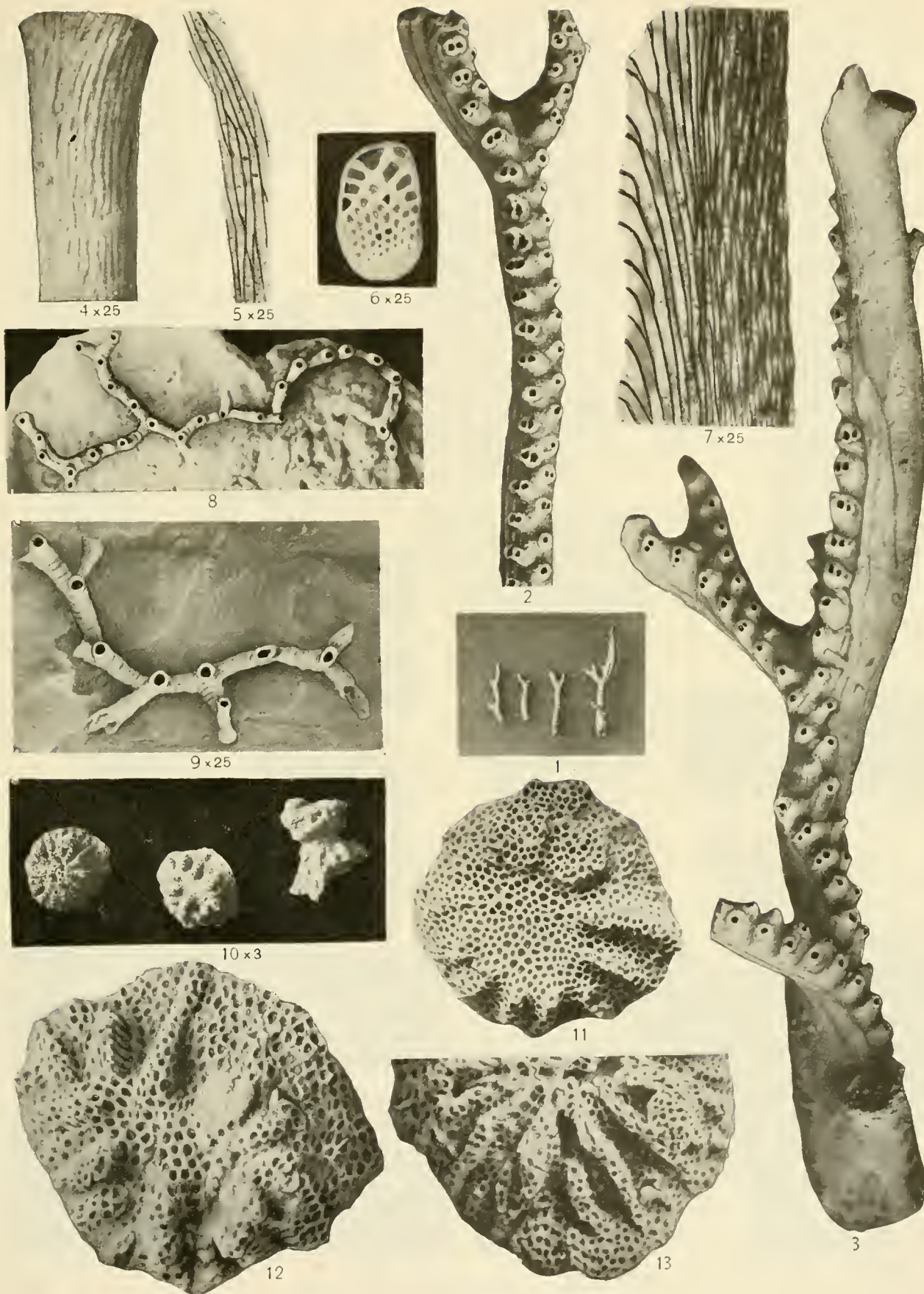
Cat. No. 65362, U.S.N.M.

FIGS. 10-13. *Lichenopora verrucosa* Phillipi, 1843 (p. 818). (See also Plate 130, figs. 12, 13.)

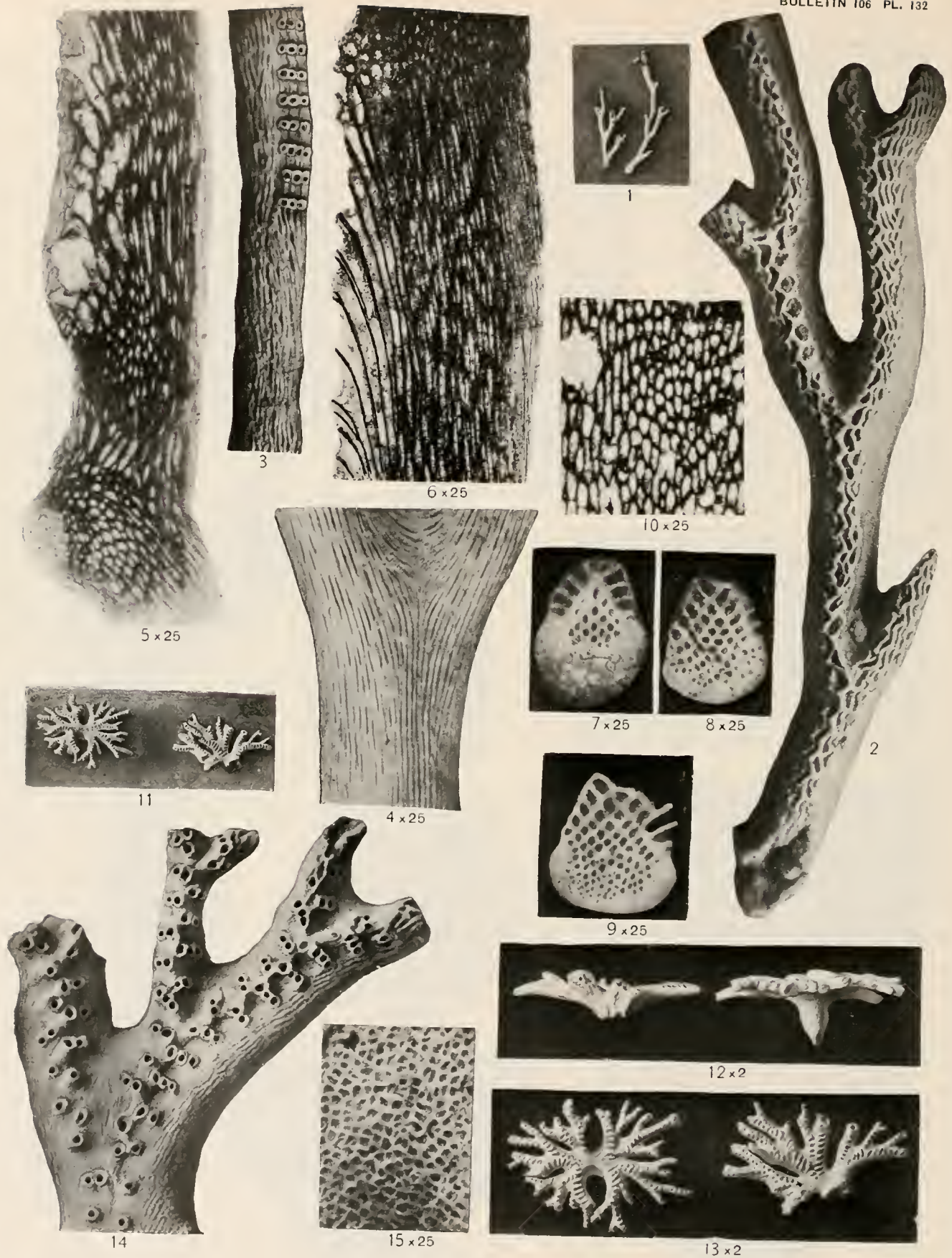
10. Top and side views of three examples, $\times 3$.
11. A simple zoarium with a large central area, $\times 12$.
12. Zoarium with separated fascicles, $\times 12$.
13. Portion of another zoarium, $\times 12$, with fascicles closely arranged.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.

Cat. No. 65363, U.S.N.M.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 132.

FIGS. 1-10. *Idmidronca culler*, new species (p. 785).

1. Two zoarial fragments, natural size.
2. Portion of a fragment shown in figure 1, $\times 12$.
3. Lateral face of a branch, $\times 12$.
4. Dorsal showing the striations of the firmatopores, $\times 25$.
5. Longitudinal section showing branching of a stem, $\times 25$.
6. Longitudinal section through the extremity of a branch, $\times 25$.
- 7, 8, 9. Transverse sections, $\times 25$.
10. Tangential section of the dorsal showing the spindles formed by the firmatopores, $\times 25$.
Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.
Cat. No. 65358, U.S.N.M.

FIGS. 11-15. *Idmidronca rosacca*, new species (p. 784).

11. Two zoaria, natural size.
12. Profile of the same specimens, $\times 2$, showing development of branches on a stem.
13. Top view of the same, $\times 2$.
14. Celluliferous surface, $\times 12$, exhibiting fascicles with only 2 or 3 zooecia.
15. Abraded dorsal showing the firmatopores, $\times 25$.
Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.
Cat. No. 65359, U.S.N.M.

PLATE 133.

FIGS. 1-13. *Erkosonea scmolata*, new species (p. 763).

1. Fragments of the idmoneiform zoarium, natural size.
2. Celluliferous side of a well preserved example, $\times 12$.
3. Lateral face, $\times 12$. The tubes are distinct and separated by a distinct thread.
- 4, 5. Dorsal side with the dactylethrae, $\times 12$.
6. Dorsal of a worn branch, $\times 12$. The calcareous covering lamella of the dactylethrae is broken.
7. Frontal of a branch, $\times 25$, showing dactylethrae at the bifurcation.
8. Branch of *Erkosonea adnota*, new species, from the Middle Jacksonian at Wilmington, North Carolina, showing ovicell, $\times 12$. Introduced here by error.
9. Longitudinal section, $\times 25$. The walls of the dactylethrae appear to be separated by a white line indicating an incomplete intercellular tissue.
10. Longitudinal section, $\times 25$, passing through a bifurcation.
11. Longitudinal section, $\times 25$. Dactylethrae of ramification are visible.
- 12, 13. Two transverse sections, $\times 25$.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

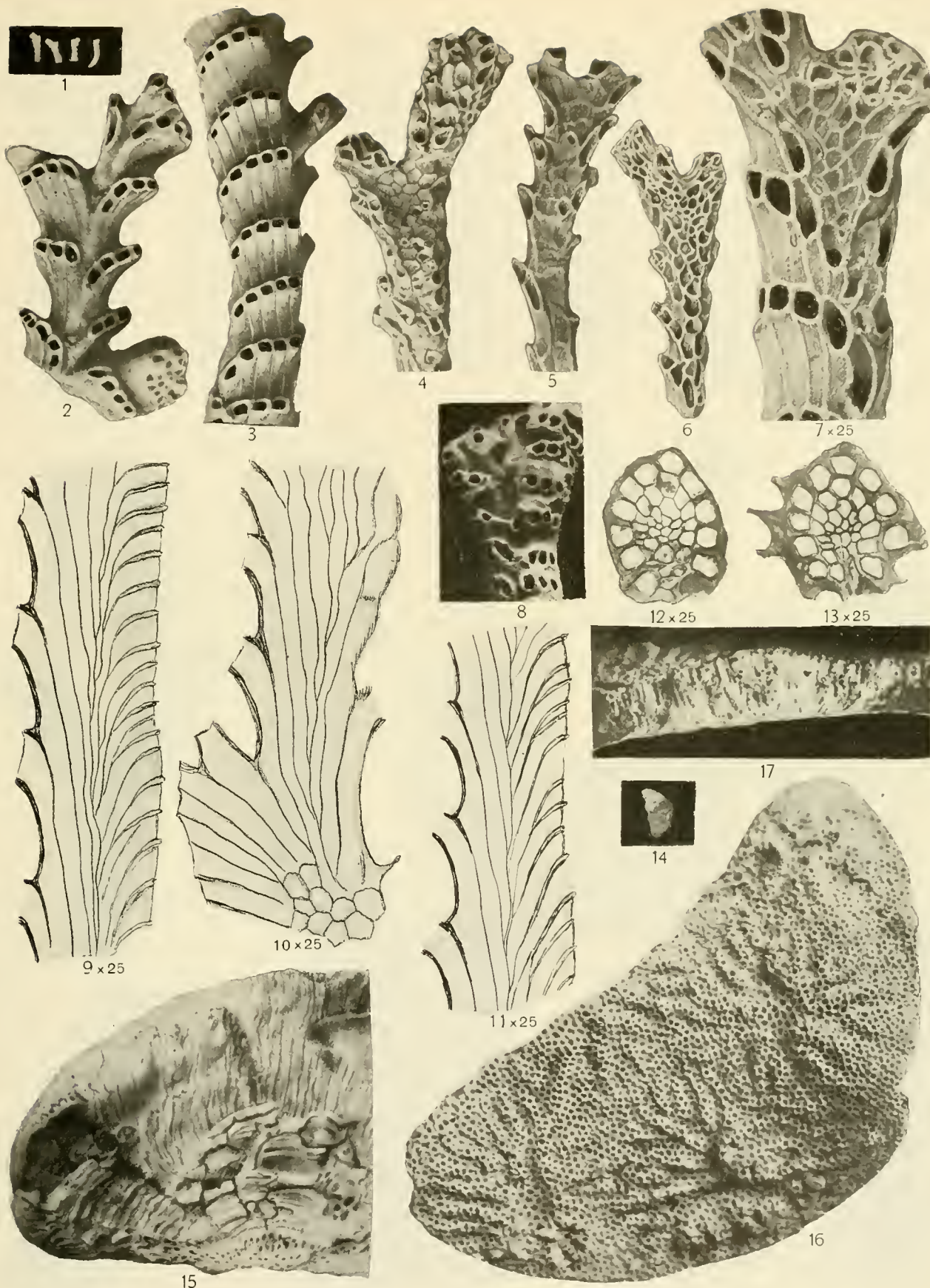
Cat. No. 65364, U.S.N.M.

FIGS. 14-17. *Lichuopora grignonensis* var. *multilamellosa*, new variety (p. 820).

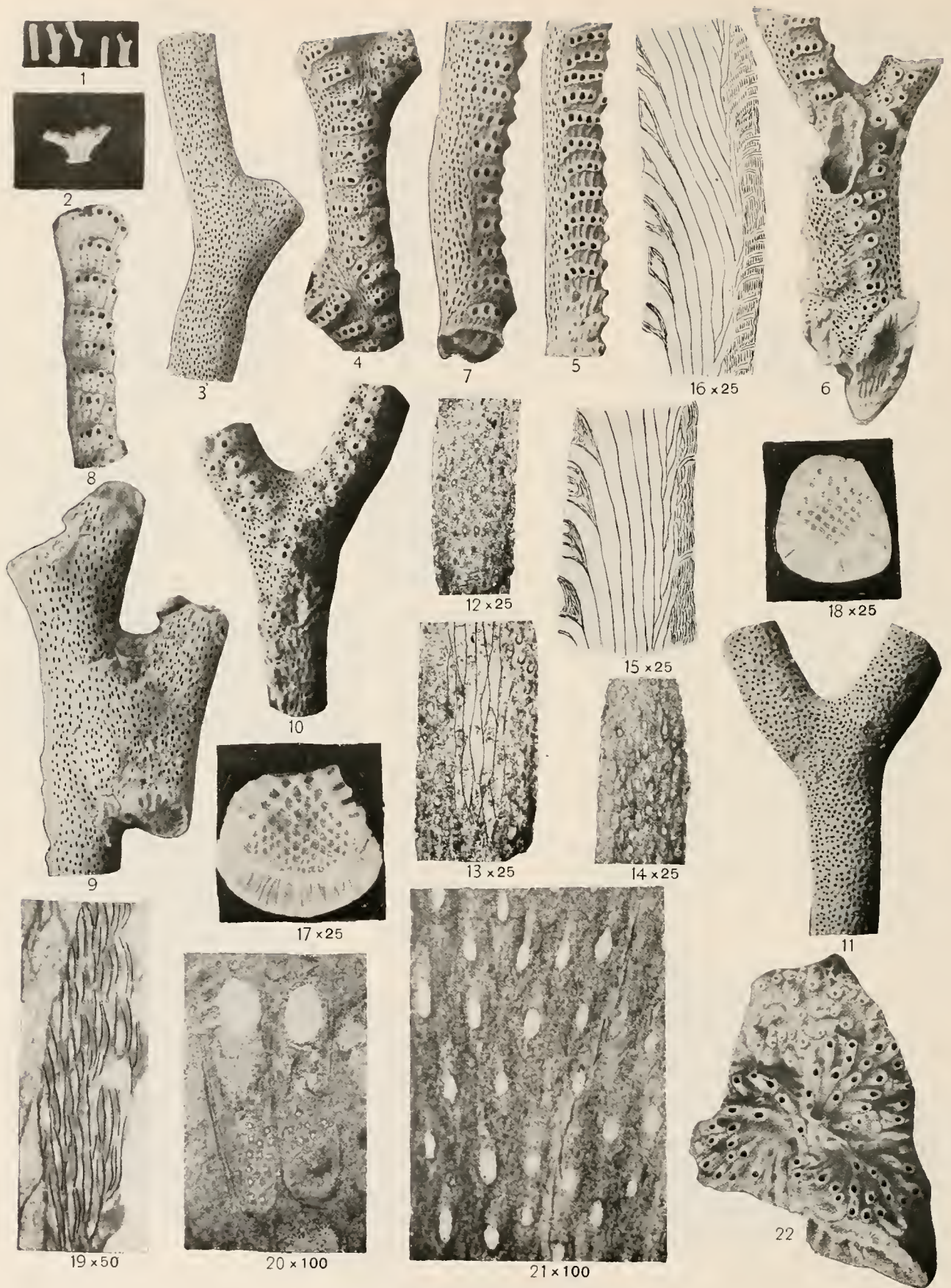
14. The type-specimen, natural size, a fragment of a lamellar expansion.
15. Basal lamella of the type, $\times 12$.
16. Surface of the same, $\times 12$. The fascicles are very attenuated. The cancelli are of the same size as in the species.
17. Edge view of a broken zoarium consisting of but one thick lamella, $\times 12$.

Middle Jacksonian: Rich Hill, $5\frac{1}{4}$ miles southeast of Knoxville, Crawford County, Georgia.

Cat. No. 65365, U.S.N.M.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 134.

FIGS. 1-21. *Polyascosoccia jacksonica*, new species (p. 837).

1. Zoarial fragments, natural size.
2. Base of a zoarium, $\times 2$.
3. Posterior face, $\times 12$, showing the small vacuoles.
4. Anterior face, $\times 12$, illustrating alternate arrangement of fascicles.
5. Lateral face of a young branch, $\times 12$. The frontal of the tubes is concave and does not yet bear vacuoles.
6. Branch with ovicell, $\times 12$.

Middle Jacksonian: Rich Hill, $5\frac{1}{4}$ miles southeast of Knoxville, Crawford County, Georgia.

Cat. No. 65333, U.S.N.M.

7. Lateral face, $\times 12$. The vacuoles cover the frontal of the tubes.
8. Lateral face of a young branch, $\times 12$. The frontal of the tubes is covered with transverse vacuoles.
9. Dorsal of a reticulate branch, $\times 12$.
10. Anterior face of a basal branch, $\times 12$.
11. Posterior face, $\times 12$.
12. Tangential section of the dorsal, $\times 25$, at the level of the basal lamella.
13. Tangential section, $\times 25$, just above the basal lamella, showing the usual lozenge shaped areas.
14. Tangential section, $\times 25$, through the orifice of the vacuoles.
- 15, 16. Two longitudinal sections, $\times 25$.
17. Transverse section through the fascicles, $\times 25$.
18. Transverse section between the fascicles, $\times 25$.
19. Longitudinal thin section, $\times 50$, exhibiting the pseudolamellar structure.
20. Tangential section of a tube, $\times 100$. The structure is identical with that of all other Cyclostomata.
21. Tangential section, $\times 100$, taken at the level of the orifice of the vacuoles. The sulci are indicated by the clear spaces.

Middle Jacksonian: Three and one-half miles south of Perry, Georgia.

Cat. No. 65334, U.S.N.M.

FIG. 22. *Tubulipora interrupta*, new species (p. 758).

The incrusting zoarium, $\times 12$.

Middle Jacksonian: Rich Hill, $5\frac{1}{4}$ miles southeast of Knoxville, Crawford County, Georgia.

Cat. No. 65335, U.S.N.M.

PLATE 135.

FIGS. 1-15. *Centronca micropora* Reuss, 1869 (p. 761).

1. Various views of the zoarium, natural size.
- 2, 3. An aggregated zoarium, natural size and $\times 3$.
4. Basal side of an aggregated zoarium, $\times 3$. The basal lamella is concentrically striated.
5. Celluliferous face of a discoidal zoarium, $\times 6$. The fascicles are irregularly arranged.
6. Lower face of another simple zoarium, $\times 6$.
7. Side view of two superposed subcolonies, $\times 6$.
8. Top and basal views of two young specimens, $\times 12$, with marginal subcolonies.
9. Axis of union of basal lamellae of two adjacent subcolonies, $\times 12$. The pores are the orifices of the incomplete tubes.
10. Ovicelled specimen, $\times 12$.
11. Zoarium with large marginal lamella, $\times 12$, supporting very young incompletely calcified zooecia.
12. Zoarium with pluriserial fascicles, $\times 12$.
13. Zoarium with small marginal subcolonies, $\times 12$.
14. An ovicelled zoarium, $\times 12$.
15. Median thin section, $\times 12$, showing closed zooecia (*z. c.*) in the center and the beginning of a subcolony (*s. c.*) to the left.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65343, U.S.N.M.

FIGS. 16-20. *Idmonca arcuata*, new species (p. 776).

16. Specimens of the short free zoarium, natural size.
- 17, 18. Celluliferous side of these specimens, $\times 12$.
- 19, 20. Dorsal of the same examples, $\times 12$, showing convex striations.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

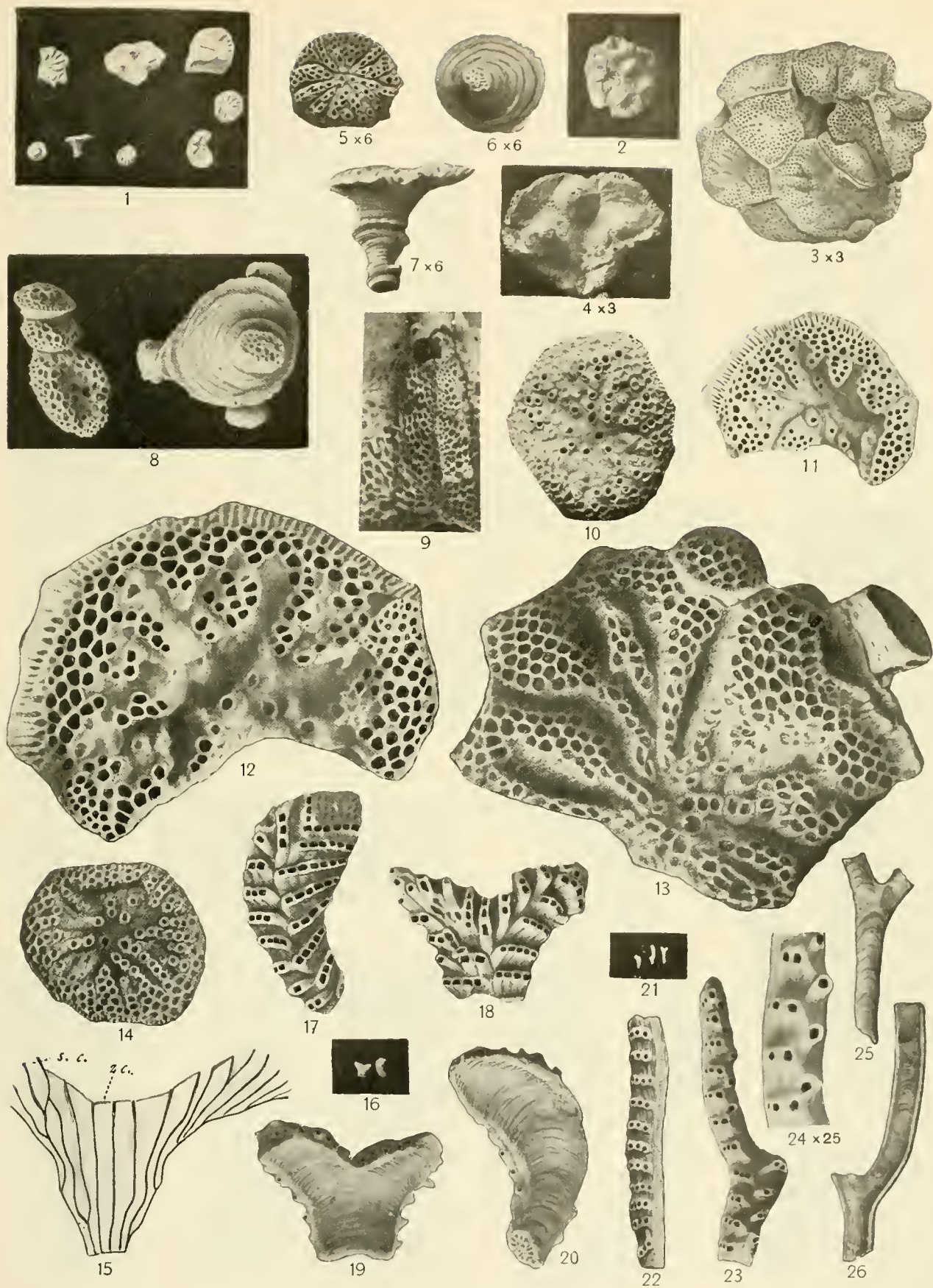
Cat. No. 65344, U.S.N.M.

FIGS. 21-26. *Idmonca sloani*, new species (p. 776).

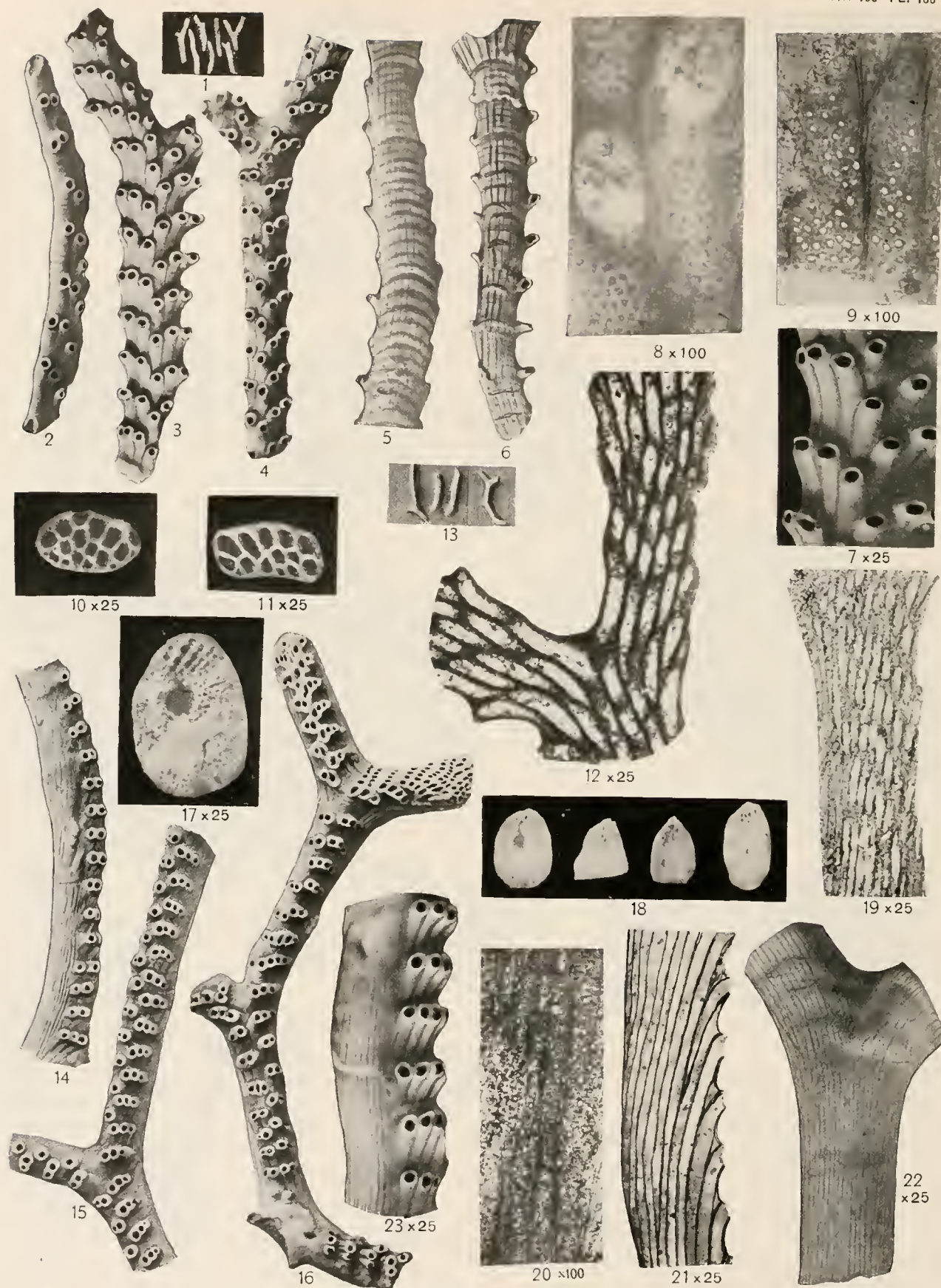
21. Fragments of the free linear zoarium, natural size.
22. Lateral view of an example, $\times 12$.
- 23, 24. Frontal side of another specimen, $\times 12$, and a portion, $\times 25$.
25. Dorsal of a specimen, $\times 12$, with a flat basal lamella.
26. Another example, $\times 12$, with a concave lamella bordered by a thick margin.

Middle Jacksonian: Near Lenuds Ferry, South Carolina, and Wilmington, North Carolina.

Cat. Nos. 65480, 65345, U.S.N.M.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 136.

FIGS. 1-12. *Idmonca milneana* D'Orbigny, 1839 (p. 773).

1. Fragments of the bifurcated compressed zoarium, natural size.
 2. Lateral view of a branch, $\times 12$.
 3. A wide zoarium, $\times 12$.
 4. A narrow zoarium, $\times 12$.
 5. Dorsal side, $\times 12$, showing convex striations much accentuated.
 6. View of dorsal, $\times 12$, showing longitudinal and transverse striations.
 7. Surface of specimen (fig. 3), $\times 25$.
 8. Tangential section of the frontal, $\times 100$.
 9. Tangential section of the dorsal, $\times 100$.
 - 10, 11. Transverse sections, $\times 25$.
 12. Tangential section of the dorsal, $\times 25$, after removal of the basal lamella.
- Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 65351, U.S.N.M.

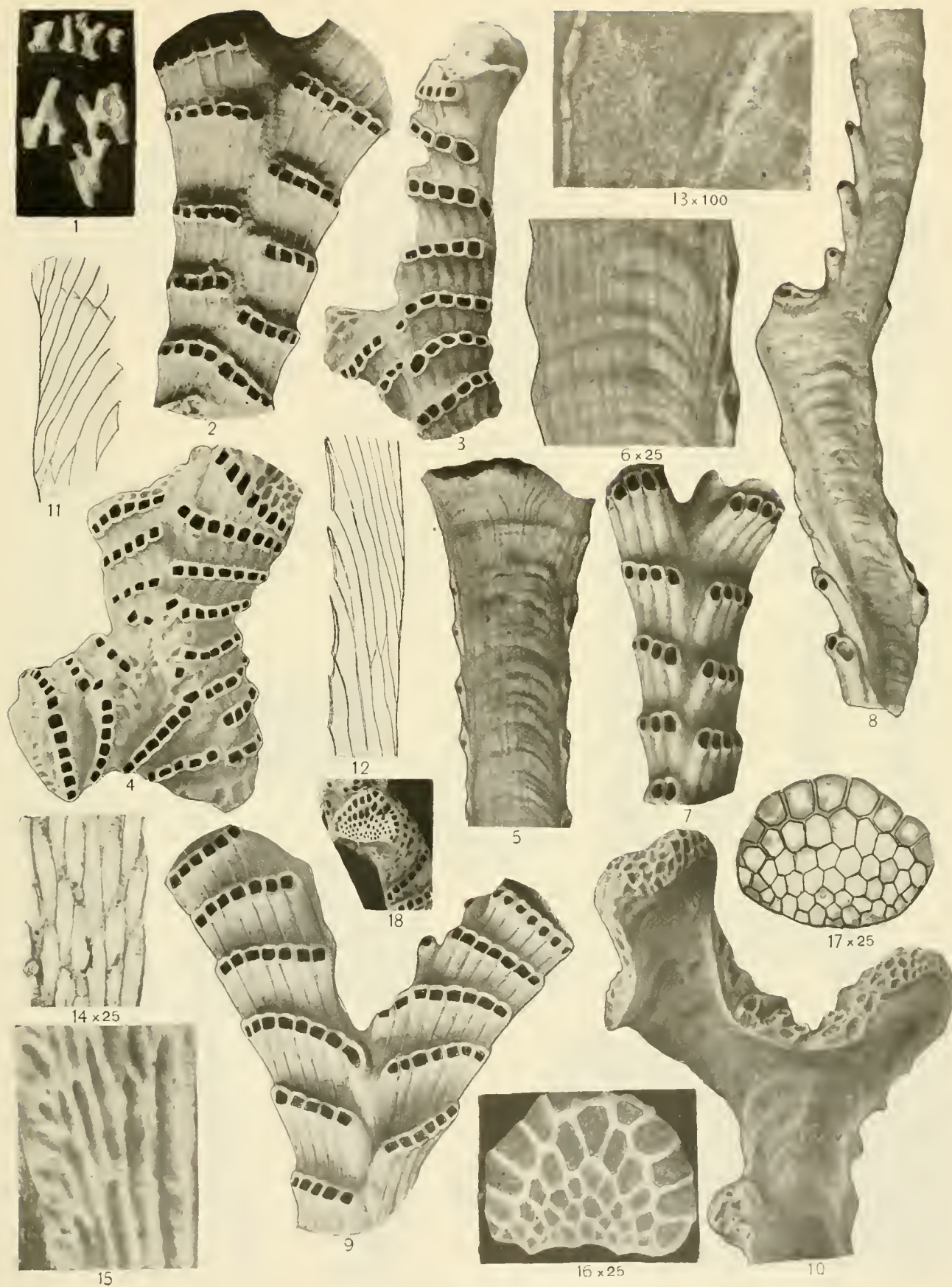
FIGS. 13-23. *Idmonca magnificersa*, new species (p. 776).

13. Zoarial fragments, natural size.
 14. Lateral view of a branch, $\times 12$.
 15. Frontal view, $\times 12$.
 16. Terminal branch, $\times 12$, preserving the zone of growth.
 17. Usual transverse section, $\times 25$.
 18. Transverse sections at different heights, $\times 12$.
 19. Tangential section of the dorsal after removal of the basal lamella, $\times 25$.
 20. Tangential section of the basal lamella, $\times 100$.
 21. Longitudinal thin section, $\times 25$.
 22. Dorsal side of branch, $\times 25$, showing tubes.
 23. Lateral view of branch, $\times 25$.
- Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 65352, U.S.N.M.

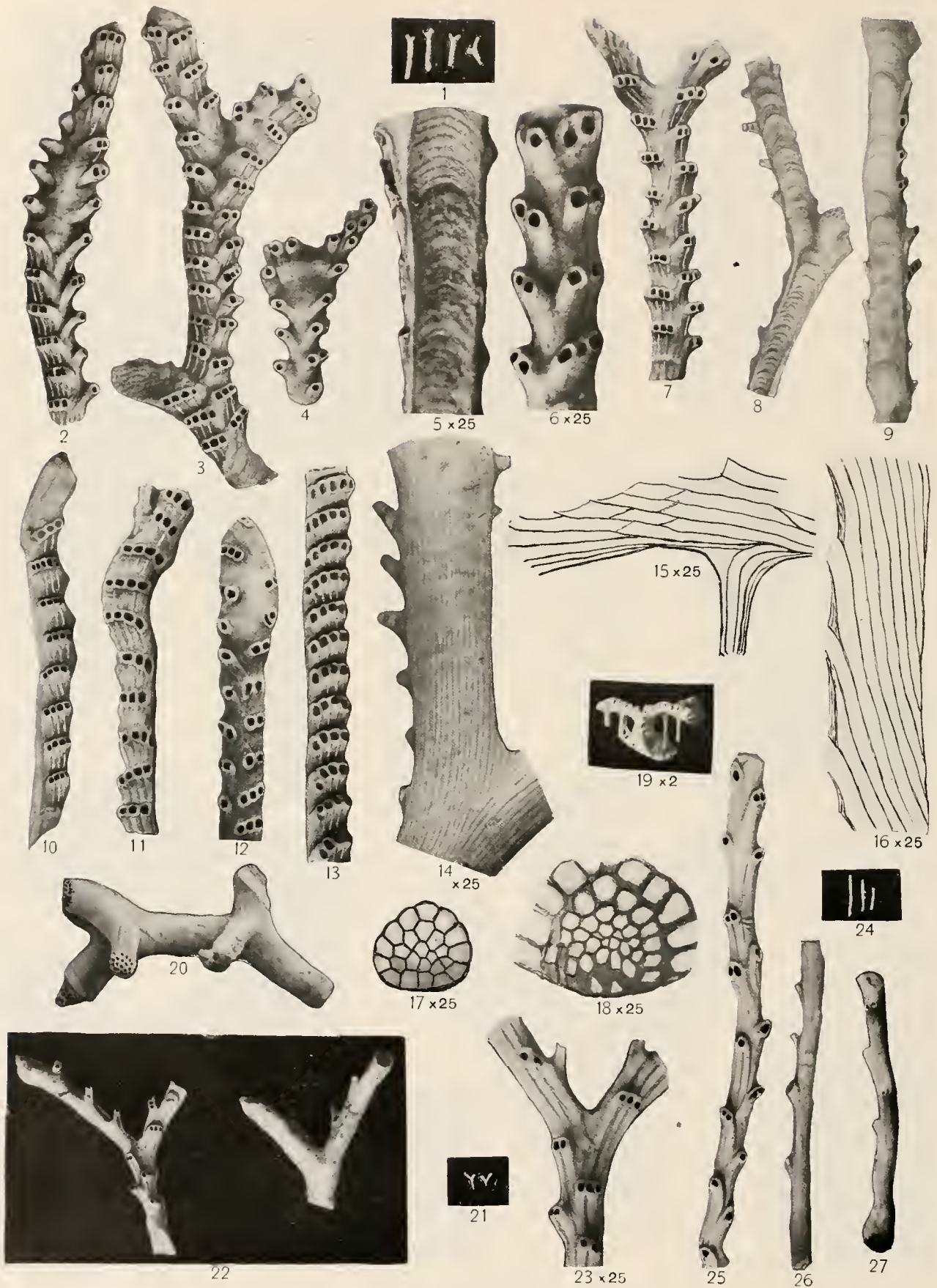
PLATE 137.

FIGS. 1-13. *Idmonca petri* D'Archiac, 1846 (p. 781).

- *1. Zoarial fragments, natural size.
2. Branch with transverse fascicles, $\times 12$.
Middle Jacksonian: Three and one-quarter miles south of Perry, Georgia.
Cat. No. 65346, U.S.N.M.
3. Lateral face of a branch, $\times 12$, with 4 or 5 tubes to the fascicles.
4. Branch of a reticulate zoarium, $\times 12$, with fascicles joined.
Jacksonian (Zeuglodon bed): South side of Suck Creek, Clarke County, Mississippi.
Cat. No. 65347, U.S.N.M.
- 5, 6. Branch with convex basal lamella, $\times 12$ and $\times 25$.
7. Specimen showing 4 or 5 tubes to the fascicle, $\times 12$.
8. Basal lamella of a branch, $\times 12$, concave below and convex above.
Lower Jacksonian (Moody's marl): Jackson, Mississippi.
Cat. No. 65348, U.S.N.M.
9. An example with 7 or 8 tubes to the fascicle, $\times 12$.
10. Zoarium with concave basal lamella. The thick zone of growth is visible.
11. Longitudinal section, $\times 12$.
Jacksonian (Zeuglodon bed): Shubuta, Mississippi.
Cat. No. 65349, U.S.N.M.
12. Longitudinal thin section, $\times 12$.
13. Tangential section of the dorsal, $\times 100$.
14. Tangential section of the dorsal, $\times 25$, after the removal of the basal lamella.
15. View of the interior obtained by the ablation of the basal lamella, $\times 12$.
16. Transverse section through the fascicles, $\times 25$.
17. Transverse section between the fascicles, $\times 25$.
18. Cross section of a branch, $\times 12$.
Middle Jacksonian: Rich Hill, $5\frac{1}{2}$ miles southeast of Knoxville, Georgia.
Cat. No. 65350, U.S.N.M.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 138.

FIGS. 1-20. *Idmonca grillator*, new species (p. 777).

1. Fragments of the small, linear, bifurcated zoarium, natural size.
2. An ovicelled zoarium, $\times 12$.
3. A branch with salient and divergent fascicles, $\times 12$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 65414, U.S.N.M.
4. An ovicelled branch, $\times 12$.
Vicksburgian (Marianna limestone): One mile north of Monroeville, Alabama.
Cat. No. 65415, U.S.N.M.
- 5, 6. Dorsal and frontal of a branch, $\times 25$.
Vicksburgian (Marianna limestone): Near Claiborne, Monroe County, Alabama.
Cat. No. 65416, U.S.N.M.
7. Branching fragment, $\times 12$, with broken fascicles.
- 8, 9. Dorsal side of two branches, $\times 12$, with convex striations. Branch convex above.
10. Lateral face of a branch with salient fascicles, $\times 12$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 65414, U.S.N.M.
- 11, 12. Lateral and frontal views, $\times 12$, of an ovicelled branch. The oeciostome is preserved.
Vicksburgian (Marianna limestone): Near Claiborne, Monroe County, Alabama.
Cat. No. 65416, U.S.N.M.
13. Lateral face, $\times 12$, with fascicles broken.
Vicksburgian (Marianna limestone): One mile north of Monroeville, Alabama.
Cat. No. 65415, U.S.N.M.
14. An inferior branch, $\times 25$, showing convex dorsal striated longitudinally by the tubes.
15. Thin section through a radicle, $\times 25$.
16. Longitudinal thin section, $\times 25$.
- 17, 18. Transverse sections, $\times 25$.
19. Zoarial base, $\times 2$, provided with radicle cells for support.
20. Zoarial fragment, $\times 6$, showing radicle cells of consolidation.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 65414, U.S.N.M.

FIGS. 21-23. *Idmonca parvula*, new species (p. 780).

- 21, 22. Frontal and dorsal of the very small free linear zoarium, natural size and $\times 12$.
23. Frontal, $\times 25$.
Middle Jacksonian: One and eight-tenths miles west of Wrightsville, Georgia.
Cat. No. 65417, U.S.N.M.

FIGS. 24-27. *Idmonca filiformis*, new species (p. 781).

24. Fragments of the long, linear zoarium, natural size.
25. Frontal, $\times 12$, showing alternate fascicles composed of two zooecia only.
- 26, 27. Dorsal and lateral views of a branch, $\times 12$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 65418, U.S.N.M.

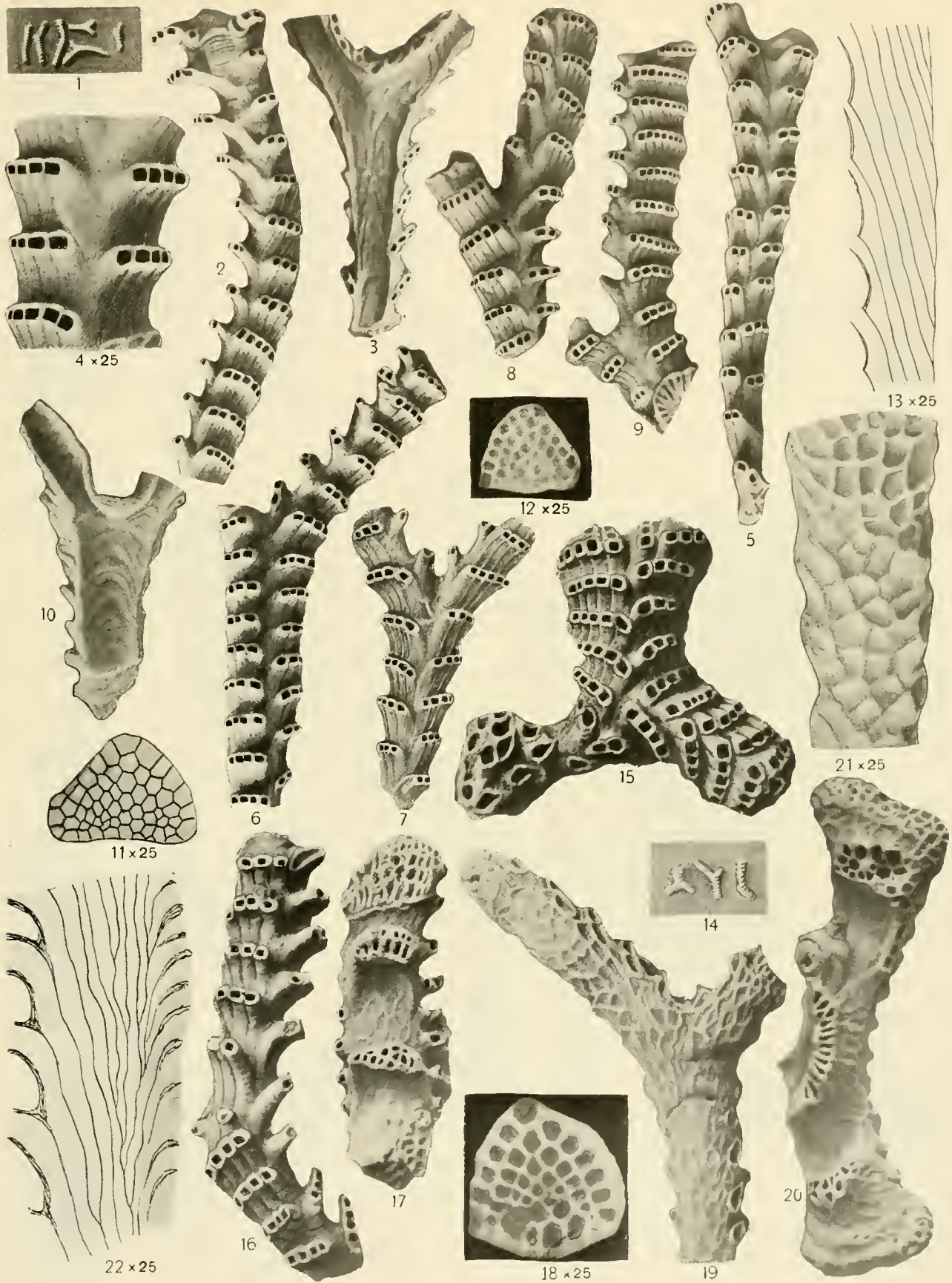
PLATE 139.

FIGS. 1-13. *Idmonea petri* D'Archiac, 1846 (p. 781).

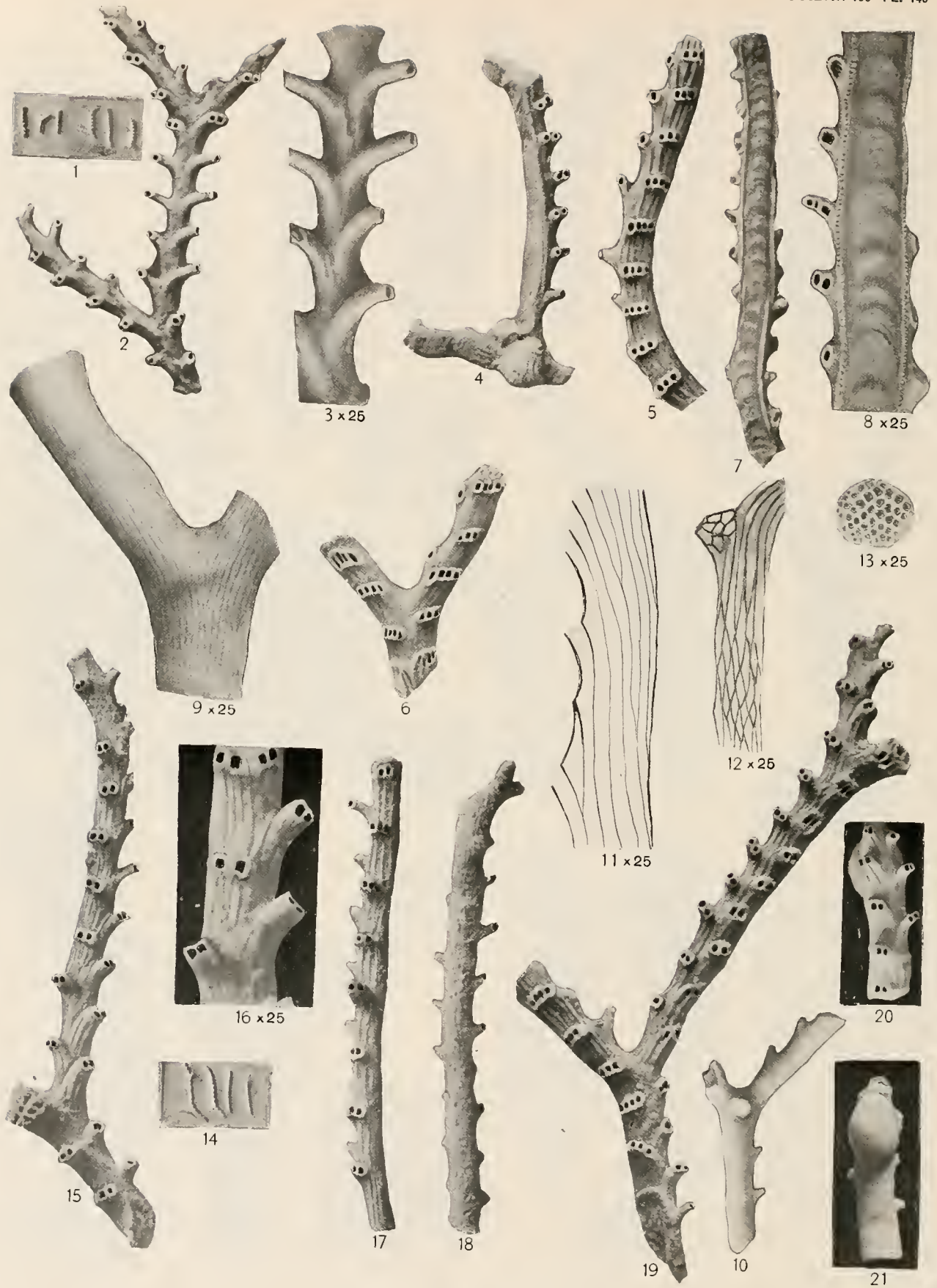
1. Fragments of the zoarium, natural size.
2. Branch seen in profile, $\times 12$. At the top is an incomplete ovicell.
3. Fragment showing concave dorsal side, $\times 12$.
4. Portion of figure 2, $\times 25$.
5. Basal, claviform branch, $\times 12$.
6. Portion of a branch at a bifurcation, $\times 12$.
7. A claviform branch with fascicles arranged alternately, $\times 12$.
Vicksburgian: West bank Conecuh River, Escambia County, Alabama.
Cat. No. 65355, U.S.N.M.
8. A branch with 4 to 6 tubes to the fascicle, $\times 12$.
9. A branch with 8 tubes to the fascicle, $\times 12$.
10. Dorsal showing the concave basal lamella, $\times 12$.
- 11, 12. Normal transverse sections, $\times 25$.
13. Vertical section, $\times 25$.
Middle Jacksonian: Eutaw Springs, South Carolina.
Cat. No. 65356, U.S.N.M.

FIGS. 14-22. *Erkosonca admota*, new species (p. 764). (See also Plate 133, fig. 8.)

14. Several fragments, natural size, showing bifurcation.
15. Frontal of a bifurcated specimen, $\times 12$.
16. A narrow branch, $\times 12$, showing convexity of the tubes.
17. Dorsal of a branch with radicular lamellae, $\times 12$.
18. Normal transverse section, $\times 25$.
19. Dorsal exhibiting dactylethrae, $\times 12$.
20. Branch with radicular lamella, $\times 12$.
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.
Cat. No. 65357, U.S.N.M.
21. Dorsal, $\times 25$, showing dactylethrae with salient walls.
22. Longitudinal section, $\times 25$.
Upper Jacksonian (Ocala limestone): West bank Sepulga River, Escambia County, Alabama.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 140.

FIGS. 1-13. *Idmonca atlantica* Johnston, 1847 (p. 778).

1. A group of the linear bifurcated branches, natural size.
2. A branch, $\times 12$, with quite divergent fascicles.
3. Portion of the same, $\times 25$.
4. Side view of a branch, $\times 12$, round at the base and flat above.
5. Lateral view of the celluliferous side, $\times 12$.
6. Fragment, $\times 12$, showing aspect where fascicles are broken.
- 7, 8. Dorsal of a branch, $\times 12$ and $\times 25$.
9. Example, $\times 25$, with convex dorsal and tubes visible.
10. Example with a short radicle, $\times 12$.
11. Longitudinal thin section, $\times 25$.
12. Tangential thin section of the dorsal, $\times 25$, showing the spindle-shaped areas just above the basal lamella.
13. Transverse section, $\times 25$.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.
Cat. No. 65353, U.S.N.M.

FIGS. 14-21. *Tervia tumida* Smitt, 1871 (p. 790).

14. Zoarial fragments, natural size.
15. A branch, $\times 12$, with salient fascicles.
16. Portion of the same branch, $\times 25$.
17. Lateral view of a branch, $\times 12$.
18. Dorsal side of the zoarium, $\times 12$.
19. Usual aspect of the species, $\times 12$, showing worn fascicles.
- 20, 21. Frontal and dorsal sides of an ovicelled example, $\times 12$.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.
Cat. No. 65354, U.S.N.M.

PLATE 141.

FIGS. 1-4. *Crisia hörnesi* Reuss, 1847 (p. 704).

1, 2. Dorsal and frontal, $\times 25$, of two segments referred to this European species.

3, 4. Two ovicelled segments, $\times 25$.

Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 65336, U.S.N.M.

FIGS. 5-7. *Crisia edwardsi* Reuss, 1847 (p. 705).

5, 7. Portions of two segments, $\times 25$.

6. Dorsal of a segment, $\times 25$.

Middle Jacksonian: Near Lenud's Ferry, South Carolina.

Cat. No. 65337, U.S.N.M.

FIG. 8. *Crisia lowei*, new species (p. 706).

A short ovicelled segment, $\times 25$.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 65338, U.S.N.M.

FIGS. 9-11. *Crisia cribraria* Stimpson, 1853 (p. 706).

9, 10. Dorsal and frontal of two incomplete segments, $\times 25$.

11. A complete segment, $\times 25$.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 65339, U.S.N.M.

FIGS. 12-19. *Platouca lamellifera*, new species (p. 760).

12. Fragments of the idmoneiform zoarium, natural size.

13. Large zoarium, $\times 12$.

14. Fragment with margin of growth, $\times 12$.

15. Ovicelled zoarium, $\times 12$.

16. Young zoarium, $\times 12$.

17. An example with basal lamella altered chemically, $\times 12$; the tubes are visible.

18. Dorsal showing the radicular lamellae, $\times 12$.

19. The basal lamella is worn and the tubes are visible and free, $\times 12$.

Lower Jacksonian: Three and one-half miles southeast of Shell Bluff Post Office, Georgia.

Cat. No. 65340, U.S.N.M.

FIGS. 20-27. *Tretouca levis*, new species (p. 769).

20. Zoarial fragments, natural size.

21, 22. Lateral view of a fragment, $\times 12$ and $\times 25$.

23. Frontal view, $\times 12$.

24. Dorsal of the zoarium, $\times 12$.

25. Dorsal with pores in quincunx, $\times 12$.

26. Branch with ovicell occupying the upper portion, $\times 12$.

27. Triangular transverse section, $\times 25$.

Lower Jacksonian: Three and one-half miles southeast of Shell Bluff Post Office, Georgia.

Cat. No. 65341, U.S.N.M.

FIGS. 28-33. *Polyascosocia imbricata*, new species (p. 840).

28. Anterior face, $\times 12$.

29. Dorsal or posterior face, $\times 12$.

30. Lateral face, $\times 12$. The proximal lip of the peristome is raised.

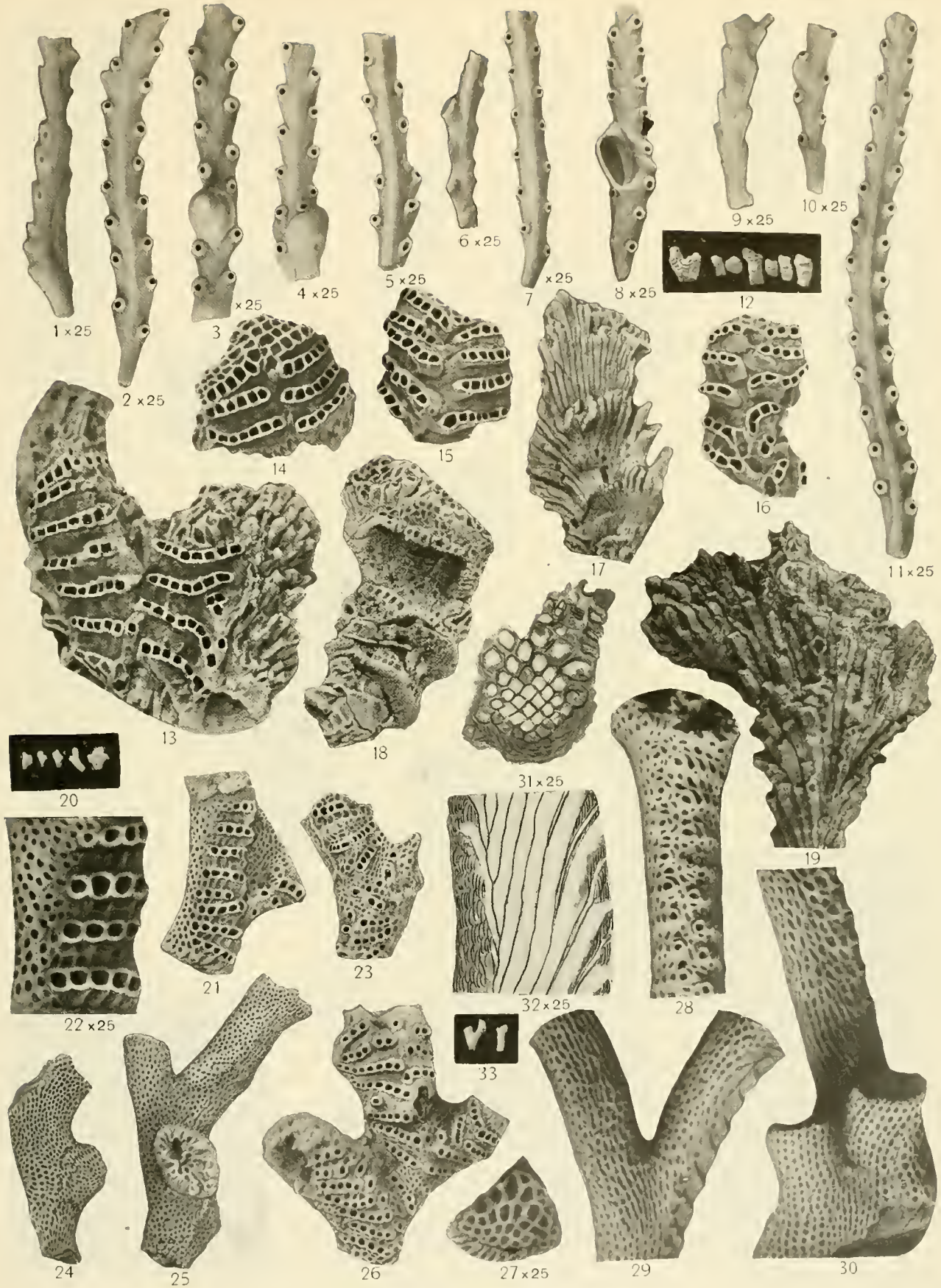
31. Transverse section in the vicinity of a bifurcation, $\times 25$.

32. Longitudinal section, $\times 25$.

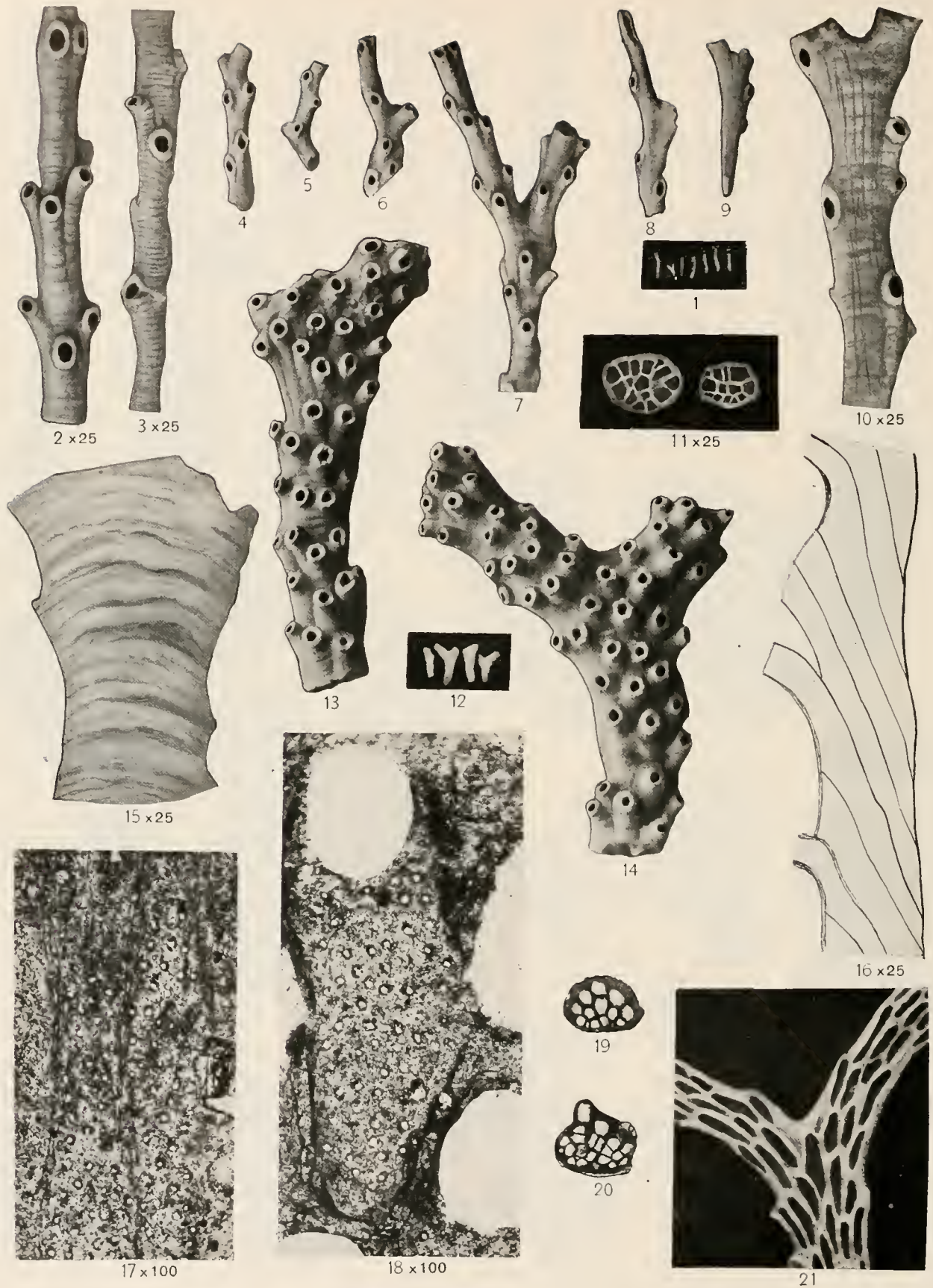
33. Fragments, natural size.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 65342, U.S.N.M.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 142.

FIGS. 1-11. *Filisparsa fallax*, new species (p. 693).

1. Fragments of the filiform zoarium, natural size.

2. Triserial branch, $\times 25$, very abundant at this horizon.

3. Biserial branch, $\times 25$.

Vicksburgian: One mile north of Monroeville, Alabama.

Cat. No. 65325, U.S.N.M.

4, 5, 6. Small biserial branches, $\times 12$.

7. Triserial branch, $\times 12$.

8, 9. Dorsal of small biserial branches, $\times 12$.

10. Dorsal, $\times 25$, showing the longitudinal and transverse striations.

11. Transverse sections, $\times 25$.

Lower Jacksonian (Moody's marl): Jackson, Mississippi.

Cat. No. 65326, U.S.N.M.

FIGS. 12-21. *Filisparsa ingens*, new species (p. 694).

12. Zoarial fragments, natural size.

13, 14. Multiserial branches, $\times 12$, showing the usual aspect.

15. Dorsal, $\times 25$, presenting large transverse wrinkles.

16. Longitudinal thin section, $\times 25$.

17. Tangential thin section of the dorsal, $\times 100$. The structure is similar to that of the frontal.

18. Tangential section of the frontal, $\times 100$.

19, 20. Transverse thin sections, $\times 12$.

21. View of interior, $\times 12$, obtained by the abrasion of the dorsal, showing characteristic aspect of dorsal gemmation.

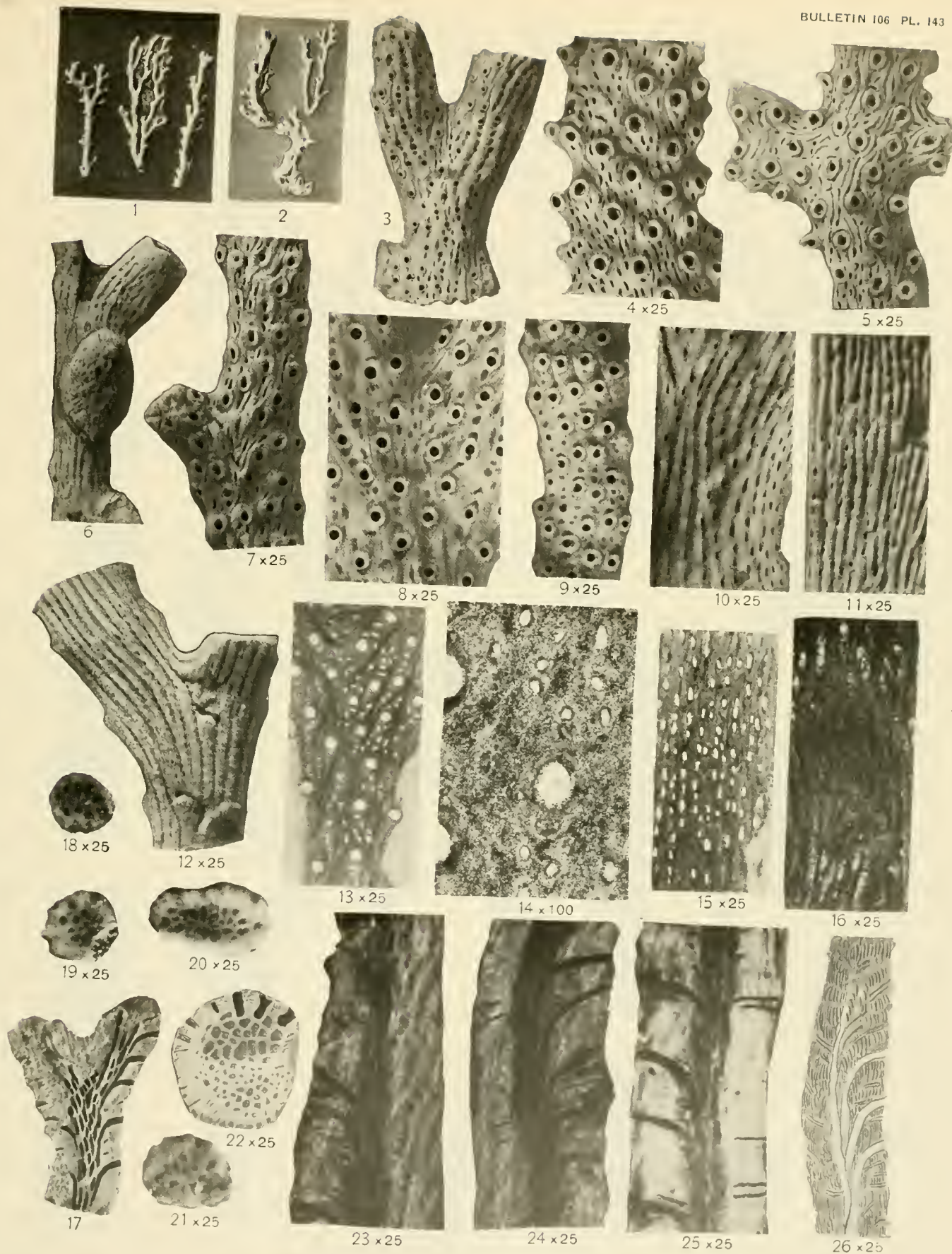
Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65327, U.S.N.M.

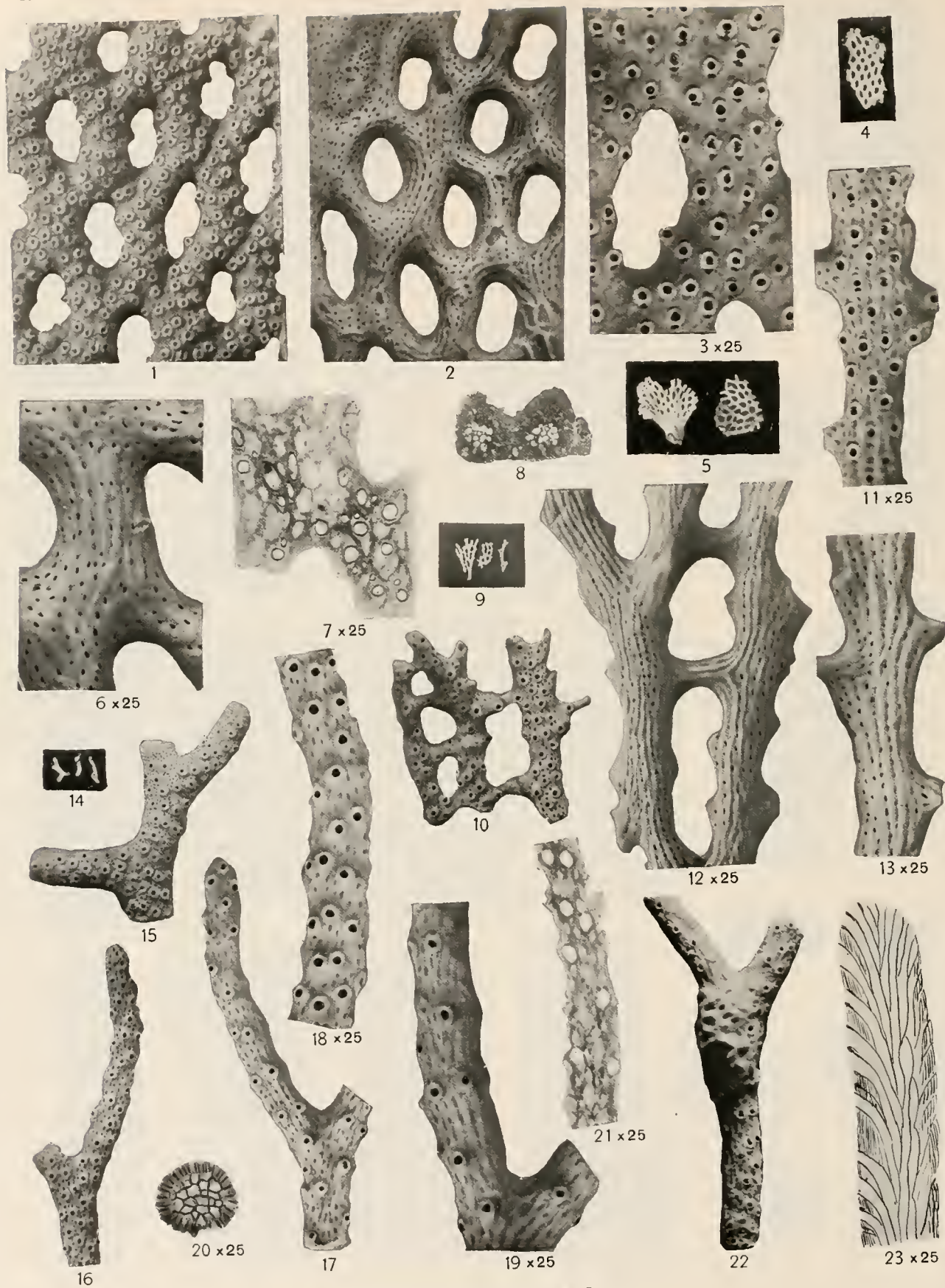
PLATE 143.

FIGS. 1-11. *Filisparsa fallax*, new species (p. 693).

- 1, 2. Views, natural size, of the sharply branched zoarium.
 3. Frontal, $\times 12$.
 4. Young branch, $\times 25$, showing salient peristomes and numerous vacuoles.
 5. Frontal, $\times 25$, with thick peristomes, large nervi and many vacuoles.
 6. Branch with ovicell, $\times 12$.
 7. Frontal of branch, $\times 25$, with small apertures.
 8. An old branch, $\times 25$. The vacuoles are numerous and large.
 9. An example, $\times 25$, with the apertures grouped transversely. Two large vacuoles are present.
 10. Normal posterior face, $\times 25$.
 11. Dorsal with small nervi, $\times 25$.
 12. Dorsal showing attenuated sulci, $\times 25$.
 13. Tangential section of the frontal, $\times 25$.
 14. Tangential section of the frontal, $\times 100$.
 15. Tangential section of the dorsal, $\times 25$.
 16. Another tangential section of the dorsal, $\times 25$. The obliquity of the vacuoles is visible.
 17. Interior of the tubes, $\times 12$, showing arrangement in lozenge shape areas. There is no central tube.
 - 18-21. Cross sections of the branches, $\times 25$.
 22. Cross section of a branch at a bifurcation, $\times 25$.
 23. Longitudinal section, $\times 25$, showing the great complexity of the dorsal network.
 24. Another longitudinal section, $\times 25$, in which the frontal vacuoles are visible.
 25. A third section, $\times 25$, showing vacuoles of the dorsal (to the right).
 26. Longitudinal thin section, $\times 25$, illustrating the lamellar and scaly wall structure.
- Jacksonian: Wilmington, North Carolina, $1\frac{1}{2}$ miles southeast of Lilly, Dooly County, Georgia (6, 4), and Rich Hill, Crawford County, Georgia (figs. 5, 7, 12).
- Cat. No. 65241, 65242, 65312. U.S.N.M.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 144.

FIGS. 1-8. *Horucra reteramac*, new species (p. 799).

1. Frontal of the reticulated zoarium, $\times 12$.
2. Dorsal, $\times 12$, showing shallow sulci and large vacuoles.
3. Surface of frontal, $\times 25$.
- 4, 5. Fragments of the reticulated zoarium, natural size.
6. Portion of the dorsal, $\times 25$.
7. Tangential thin section of the frontal, $\times 25$.
8. Transverse section of the branches, $\times 12$.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.

Cat. No. 65328, U.S.N.M.

FIGS. 9-13. *Horucra polyporoides*, new species (p. 799).

9. Zoarial fragments, natural size.
10. A fragment, $\times 12$, showing the connecting trabeculae.
11. Frontal of a branch, $\times 25$.
12. Dorsal, $\times 25$, showing narrow nervi and wide sulci.
13. Another aspect of the dorsal, $\times 25$.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.

Cat. No. 65329, U.S.N.M.

FIGS. 14-23. *Horucra tenuirama*, new species (p. 800).

14. Zoarial fragments, natural size, consisting of thin small rami.
- 15, 16, 17. Three views of the zoarial aspect, $\times 12$.
18. Frontal face, $\times 25$.
19. Dorsal, $\times 25$. The dorsal proper is very narrow.
20. Transverse section of a branch, $\times 25$, showing rounded frontal and very narrow dorsal.
21. Tangential thin section of the frontal, $\times 25$.
22. Ovicelled specimen, $\times 12$.
23. Longitudinal thin section, $\times 25$.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.

Cat. No. 65330, U.S.N.M.

PLATE 145.

FIGS. 1-3. *Hornera tuberosa*, new species (p. 800).

1. Fragment of the erect branching zoarium, natural size.
2. Frontal of the same specimen, $\times 25$.
3. Dorsal, $\times 25$, exhibiting the numerous tuberosities.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Jackson County, Florida.

Cat. No. 65331, U.S.N.M.

FIGS. 4-19. *Hornera porosa* Stoliczka, 1862 (p. 800).

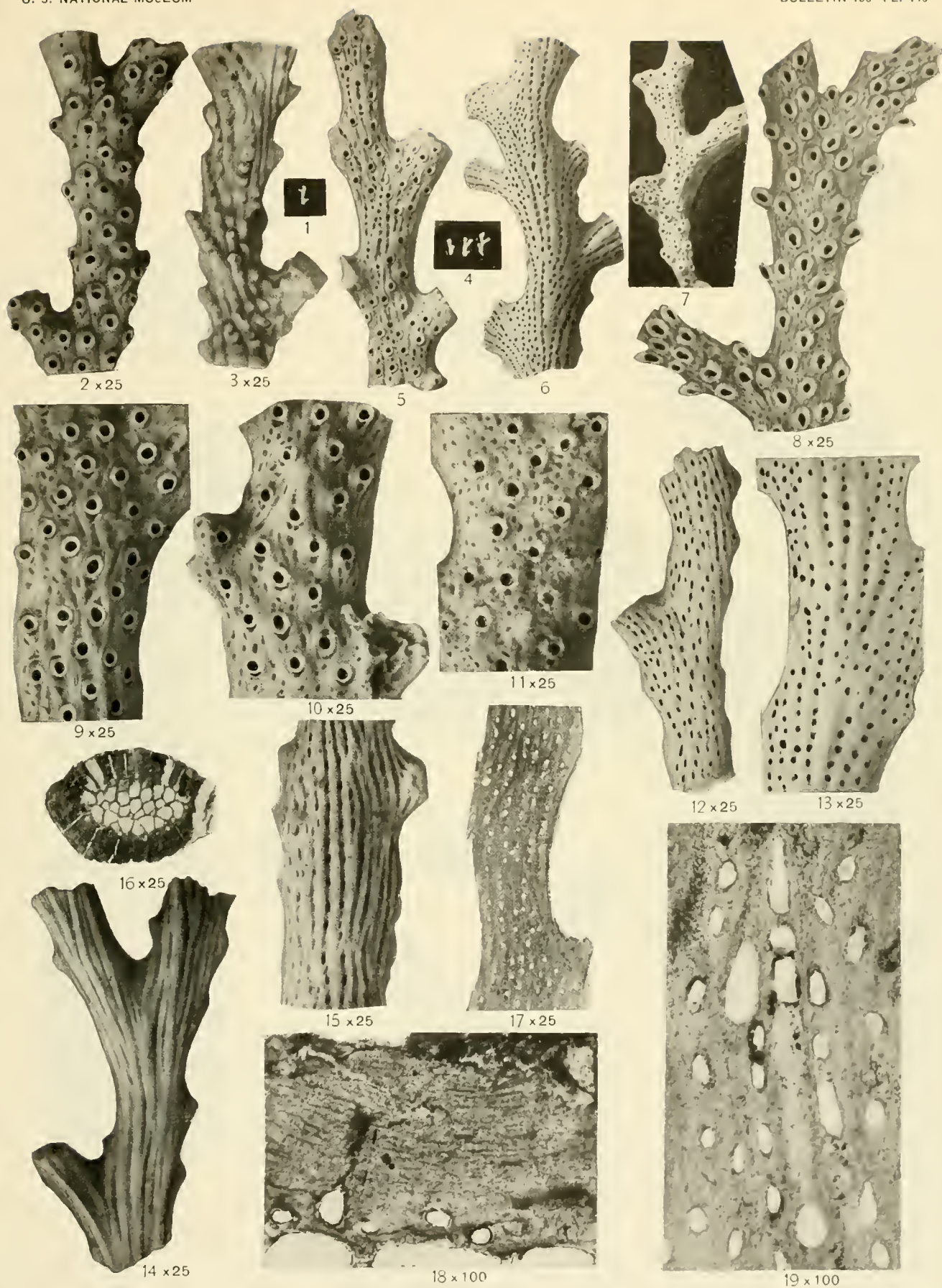
4. Zoarial fragments, natural size.
5. Frontal of young branch, $\times 12$.
6. Dorsal of adult branch, $\times 12$.
7. Very young branch, $\times 12$.
8. A branch with salient peristomes, $\times 25$.
9. Another branch, $\times 25$, showing large, salient peristomes.
10. Well preserved specimen, $\times 25$, with little salient peristomes.
11. Aspect of a worn branch, $\times 25$.
12. Dorsal showing small sulci, $\times 25$.
13. Normal aspect of dorsal, $\times 25$.
14. Specimen with wide nervi and very small sulci, $\times 25$.
15. Dorsal with small vacuoles, $\times 25$.
16. Transverse section of a branch, $\times 25$, illustrating disposition of tubes and vacuoles on the frontal and vacuoles only on the dorsal.
17. Tangential section through the dorsal, $\times 25$, cutting the vacuoles.
18. Thin section, $\times 100$, showing scaly structure of the zoarial walls.
19. Tangential thin section of the dorsal, $\times 100$.

Vicksburgian (Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 65332, U.S.N.M.

Middle Jacksonian: Wilmington, North Carolina (figs 12, 14), and Rich Hill, Crawford County, Georgia (fig. 8).

Cat Nos. 65478, 65479, U.S.N.M.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 146.

FIGS. 1-8. *Terria globulifera*, new species (p. 791).

1. Zoarial fragments, natural size.
2. The cellular anterior face, $\times 12$.
3. Posterior face, $\times 12$, showing an ovicell at the bifurcation.
4. Anterior face of another example, $\times 12$.
5. Posterior side of the same specimen, $\times 12$, bearing an ovicell.
6. Portion of the same, $\times 25$, exhibiting the oeristome more clearly.
7. Posterior side, $\times 25$, illustrating the longitudinal striae separating the tubes.
8. Cellular side, $\times 25$.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.

Cat. No. 65366, U.S.N.M.

FIGS. 9-12. *Terria pyrifer*, new species (p. 792).

9. The type specimen, natural size.
10. Posterior side of the type, $\times 12$, bearing the pyriform ovicell.
11. Anterior side of the same example, $\times 12$.
12. Portion of the same, $\times 25$.

Middle Jacksonian (Castle Hayne limestone) : Wilmington, North Carolina.

Cat. No. 65367, U.S.N.M.

PLATE 147.

FIGS. 1-11. *Terria gracilis*, new species (p. 788).

- 1, 2. Two groups of the slender zoarial branches, natural size.
3. Dorsal of a wide branch, $\times 12$. The tubes are separated by a salient thread.
4. Wide branch with oblique fascicles, $\times 12$.
5. Branch with the tubes in verticells at the base, $\times 12$.
6. Large branch, $\times 12$, with tubes in six series and arranged in verticells at the base.
7. Dorsal and frontal of very slender branches without fascicles, $\times 12$.
8. Branches bearing the dorsal ovicell, $\times 12$.
- 9, 10. Frontal of slender branches without fascicles, $\times 12$.
11. Longitudinal section, $\times 25$.

Middle Jacksonian: Wilmington, North Carolina, and near Lenuds Ferry, South Carolina (figs. 5, 6, 8).

Cat. Nos. 65434, 65482, U.S.N.M.

FIGS. 12-14. *Terria parvula*, new species (p. 790).

12. Fragments of the small zoaria, natural size.
13. Anterior or celluliferous and posterior or dorsal sides, $\times 12$.
14. Anterior side, $\times 25$.

Upper Jacksonian (Ocala limestone): Chipola River, east of Marianna, Jackson County, Florida.

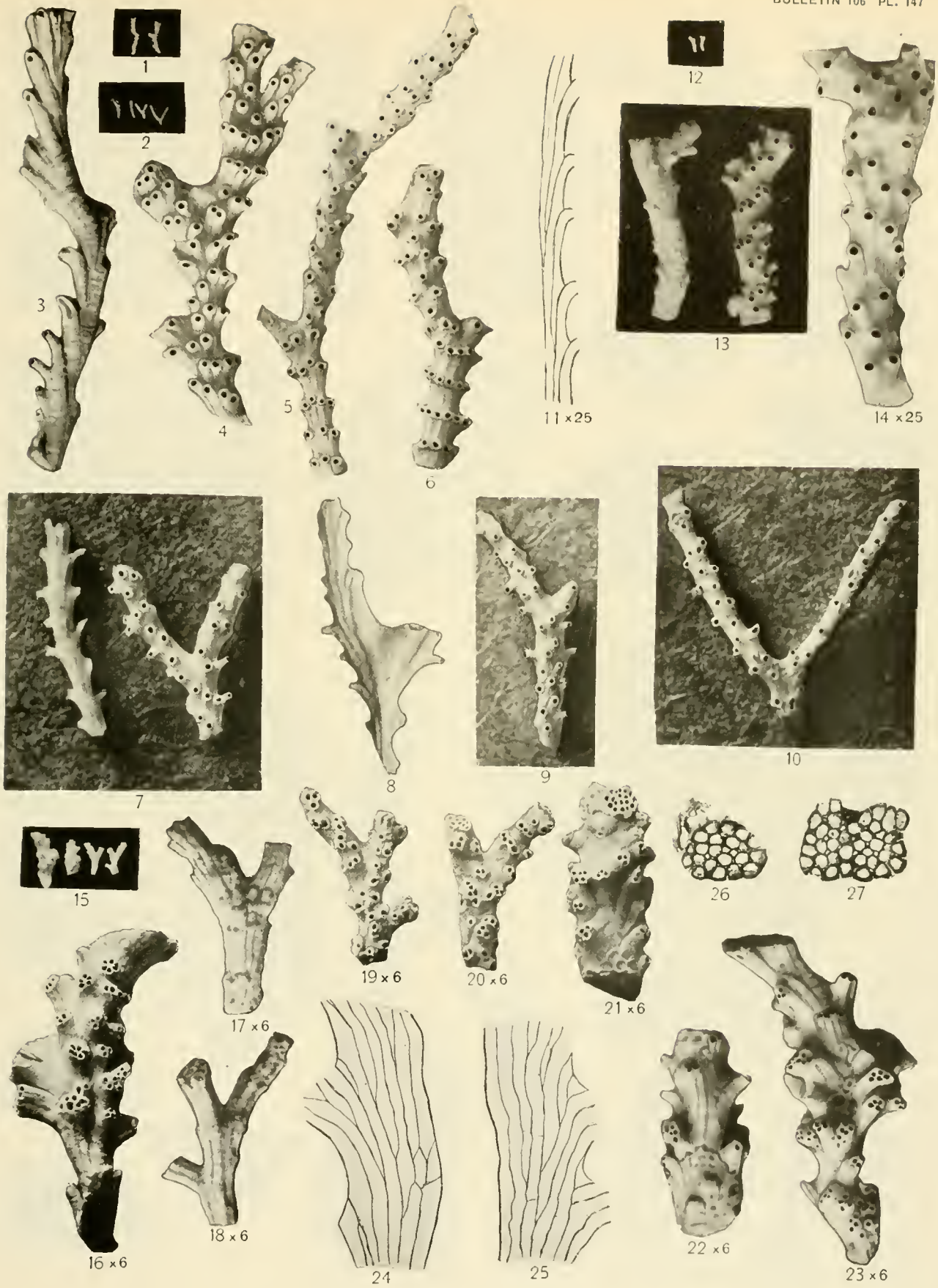
Cat. No. 65435, U.S.N.M.

FIGS. 15-27. *Fron dipora lacrigata*, new species (p. 806).

15. Four of the compressed branches, natural size.
16. Anterior face of a branch, $\times 6$, with the fascicles made up of tubes arranged in groups.
- 17, 18. Posterior side of two branches, $\times 6$, showing longitudinal striations.
- 19, 20. Anterior side of two small branches, $\times 6$. The tubes are not in distinct groups.
21. Anterior side, $\times 6$, showing the smooth interfascicular areas.
- 22, 23. Celluliferous side of two other branches, $\times 6$.
24. Longitudinal thin section, $\times 12$, through the middle of a specimen with fascicles arranged alternately.
25. Another longitudinal thin section, $\times 12$, cutting the fascicles.
26. Transverse thin section, $\times 12$, in a fascicle.
27. Another transverse section, $\times 12$, taken just before a bifurcation.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65436, U.S.N.M.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 148.

FIGS. 1-13. *Parleiosocia jacksonia*, new species (p. 824).

1, 2. Unbranched and branched specimens of the zoarium, natural size.

3. Ovicelled branch, $\times 12$.

Middle Jacksonian: Rich Hill, Crawford County, Georgia.

Cat. No. 65446, U.S.N.M.

4, 5. Small but complete zoarium, $\times 12$, and surface, $\times 25$.

Middle Jacksonian: Near Lenuds Ferry, South Carolina.

Cat. No. 65447, U.S.N.M.

6. Branch, $\times 12$, with the globular smooth ovicell.

7. Surface of specimen, $\times 25$.

Middle Jacksonian: Eighteen miles west of Wrightsville, Georgia.

Cat. No. 65448, U.S.N.M.

8. Surface of another zoarium, $\times 25$, with salient peristomes

Middle Jacksonian: Seventeen miles northeast of Hawkinsville, Georgia.

Cat. No. 65449, U.S.N.M.

9. Transverse thin section, $\times 12$, of an unsymmetrical branch.

10. Portion of another transverse thin section, $\times 25$.

11. Tangential thin section, $\times 25$.

12. Longitudinal thin section, $\times 25$. The internal cavity is closed by convex diaphragms.

13. Another longitudinal thin section, $\times 25$, showing regular constrictions of the interior.

Middle Jacksonian: Rich Hill, Crawford County, Georgia.

Cat. No. 65446, U.S.N.M.

FIGS. 14-19. *Fasciculipora surculifera*, new species (p. 808).

14, 15, 16. Two small incomplete branches, natural size, and views, $\times 6$, of their dorsal surface.

17, 18. Frontal views of the same specimens, $\times 6$.

19. Specimen shown in figure 17, $\times 25$.

Upper Jacksonian (Ocala limestone): Alachua, Florida.

Cat. No. 65450, U.S.N.M.

FIGS. 20-23. *Frondipora interporosa*, new species (p. 806).

20. Three fragments, natural size.

21. Lateral view of branch, $\times 6$.

22. Posterior or dorsal side, $\times 6$.

23. Frontal, $\times 6$, showing the tubes between the fascicles.

Middle Jacksonian: Near Lenuds Ferry, South Carolina.

Cat. No. 65451, U.S.N.M.

FIGS. 24-27. *Telopora patens*, new species (p. 807).

24. The type zoarium, natural size.

25-27. Lower face or dorsal, upper or anterior face, and lateral view of the same zoarium, $\times 6$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

Cat. No. 65452, U.S.N.M.

PLATE 149.

FIG. 1-14. *Tretocycllocia reticulata*, new species (p. 827).

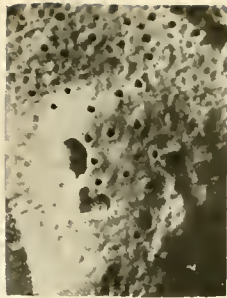
1. Fragments of the free solid reticulate zoarium, natural size.
2. Surface of a zoarium with ovicell, $\times 12$. The ovicell is fragile, little globular.
3. Surface of a zoarium, $\times 12$. The zooecial orifices are grouped in incomplete zones separated by zones of mesopores.
4. Surface, $\times 12$, with broken ovicell in the middle to the left. The ovicell is of little depth and is perforated by all the tubes.
5. Same surface as figure 3, $\times 25$. Some mesopores are closed.
6. Surface, $\times 12$, with many mesopores closed by a fragile calcareous lamella.
7. Another variation, $\times 12$, with mesopores often closed by a lamella.
8. Surface, $\times 12$, showing mesopores grouped in irregular zones.
9. Same zoarium as figure 8, $\times 25$.
10. Transverse thin section, $\times 12$.
11. Longitudinal thin section, $\times 12$. The separation between the two axial tubes of ramification occurred near the base of the cylindrical branch.
12. Longitudinal thin section, $\times 25$. The walls of the mesopores are vesicular.
- 13, 14. Tangential thin section, $\times 25$, and $\times 100$.

Middle Jacksonian: Eutaw Springs, South Carolina.

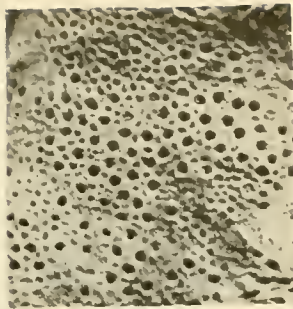
Cat. No. 65374, U.S.N.M.



1



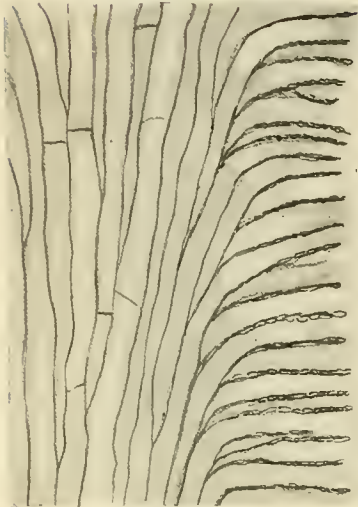
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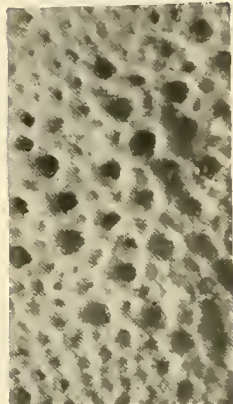
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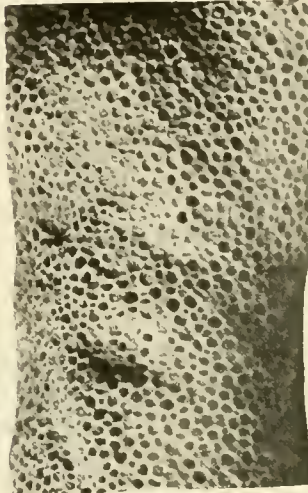
4



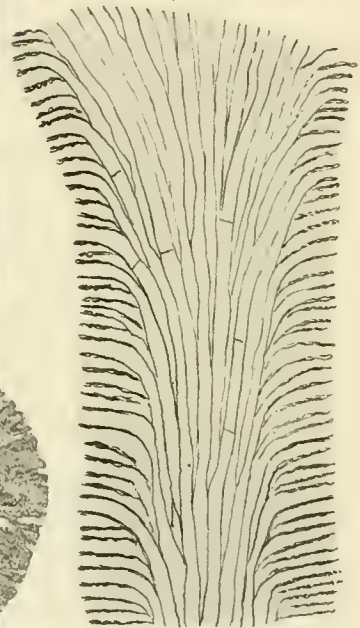
12 x 25



5 x 25



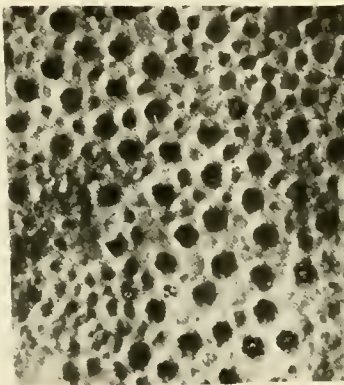
6



11



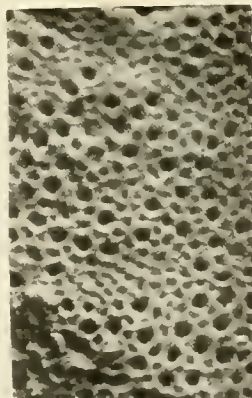
7



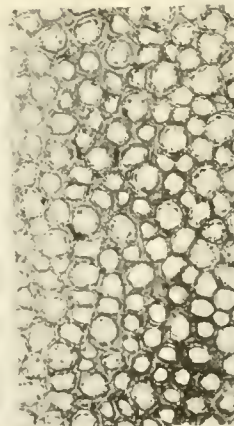
9 x 25



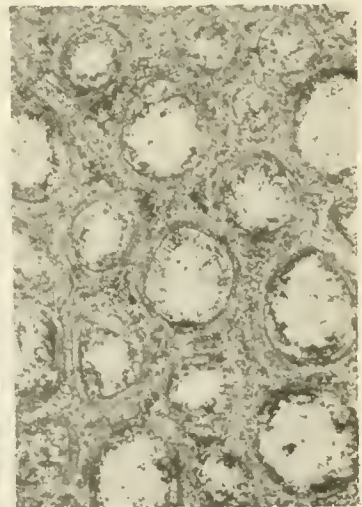
10



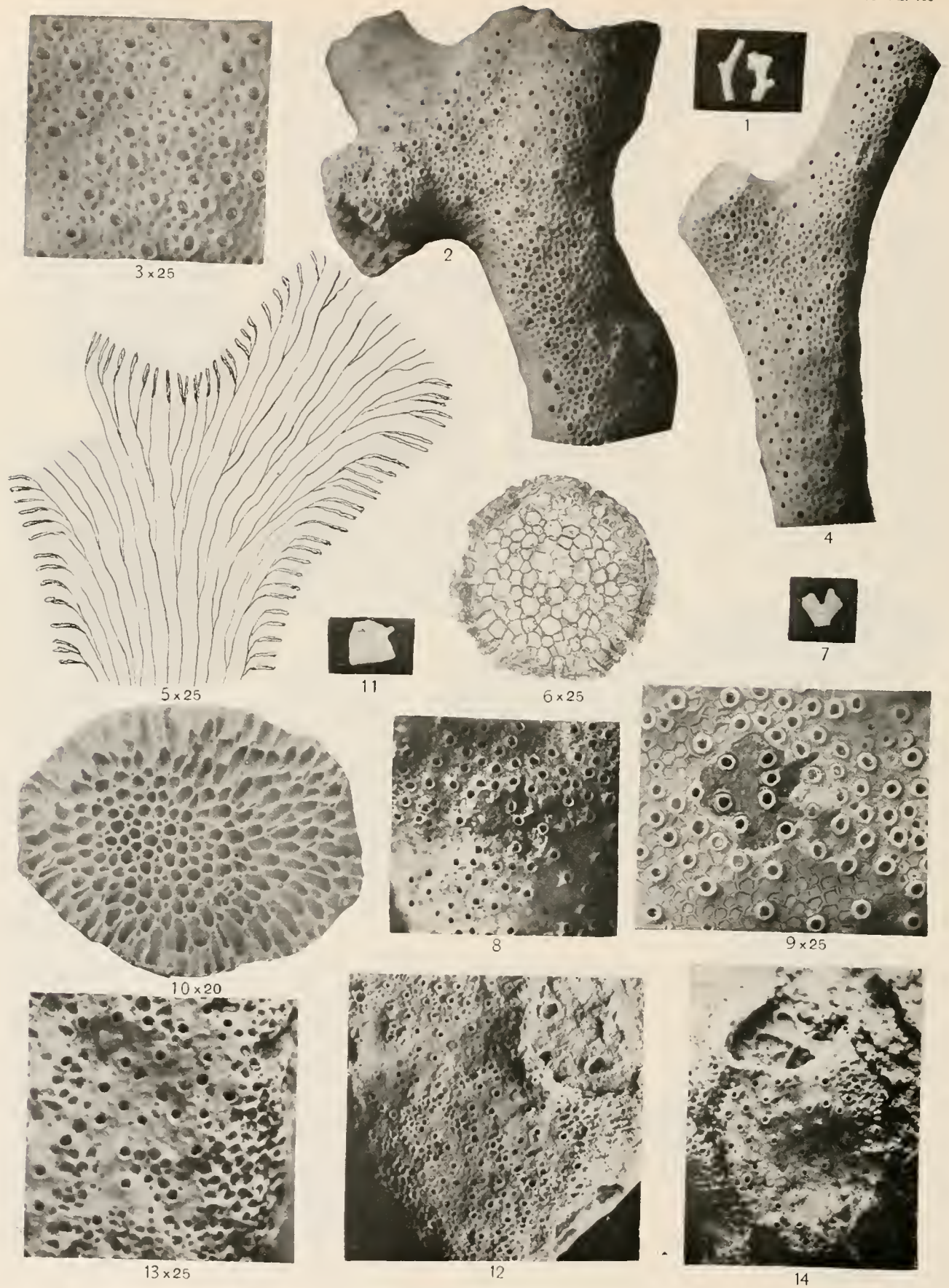
8



13 x 25



14 x 100



JACKSONIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 150.

FIGS. 1-6. *Heteropora ovalis*, new species (p. 682).

1. Fragments of the branching zoarium, natural size.
2. A branch, $\times 12$, showing the oval apertures and the numerous mesopores.
3. Portion of figure 2, $\times 25$.
4. Another branch, $\times 12$.
5. Longitudinal thin section, $\times 25$. The mesopores are very short.
6. Transverse thin section, $\times 25$.

Lower Jacksonian (Moody's marl) : Jackson, Mississippi.

Cat. No. 65371, U.S.N.M.

FIGS. 7-10. *Tretocyclocia grandis*, new species (p. 827).

7. Fragment of the cylindrical branched zoarium, natural size.
8. Surface, $\times 12$.
9. Surface, $\times 25$, showing the broken ovicell.
10. Transverse section, $\times 20$.

Lower Jacksonian (Moody's marl) : Jackson, Mississippi.

Cat. No. 65372, U.S.N.M.

FIGS. 11-14. *Partretocyclocia reptans*, new species (p. 831).

11. The incrusting zoarium, natural size.
12. Surface, $\times 12$.
13. A portion of figure 12, $\times 25$.
14. Ovicelled portion of the same specimen, $\times 12$.

Middle Jacksonian : Near Lenud's Ferry, South Carolina.

Cat. No. 65373, U.S.N.M.

PLATE 151.

FIGS. 1-6. *Partretycloecia porosa*, new species (p. 831).

1. Surface of the massive zoarium, $\times 12$, showing the ovicell. The broken upper wall permits a view of the interior.
2. Surface, $\times 12$, showing the elliptical form of the orifices and the polygonal shape of the mesopores.
3. Same zoarium as figure 2, $\times 25$.
4. Transverse thin section, $\times 50$.
5. Tangential thin section, $\times 50$.
6. Longitudinal thin section, $\times 50$.

Middle Jacksonian: Eutaw Springs, South Carolina.

Cat. No. 65368, U.S.N.M.

FIGS. 7-10. *Ceripora ? proposita*, new species (p. 679).

7. View of the zoarium, natural size, showing the expanded irregular form.
8. Surface, $\times 25$, illustrating the polygonal orifices.
9. Transverse thin section, $\times 12$.
10. Longitudinal thin section, $\times 12$, consisting of two superposed layers separated by a line of large vesicles.

Middle Jacksonian: Three and a quarter miles south of Perry, Georgia.

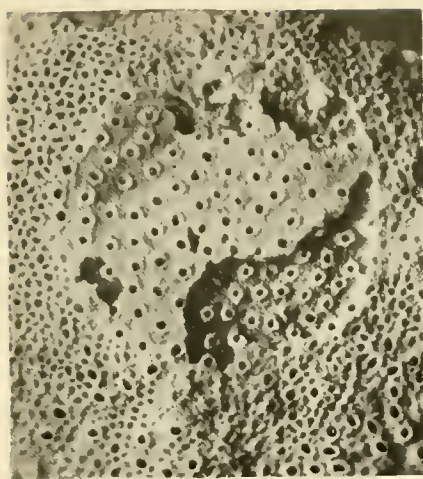
Cat. No. 65369, U.S.N.M.

FIGS. 11-17. *Ceripora aldrichi*, new species (p. 679).

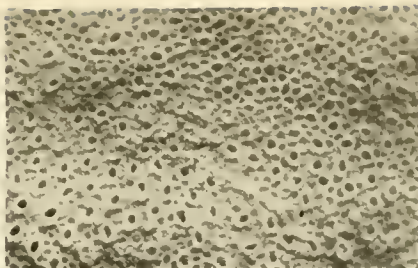
11. The small cylindrical zoarium, natural size.
12. The same specimen, $\times 12$.
13. A zoarium, $\times 12$, attached to a bryozoan and growing into a solid stem.
14. Transverse thin section, $\times 25$.
15. Transverse section, $\times 20$, of a solid branch.
16. Surface of specimen (fig. 12), $\times 25$.
17. Longitudinal thin section, $\times 25$.

Middle Jacksonian (Castle Hayne limestone): Wilmington, North Carolina.

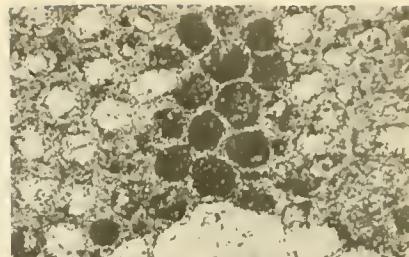
Cat. No. 65370, U.S.N.M.



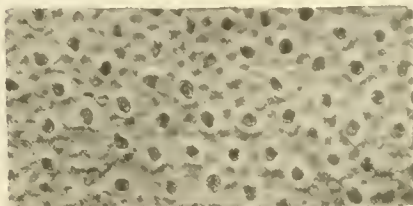
1



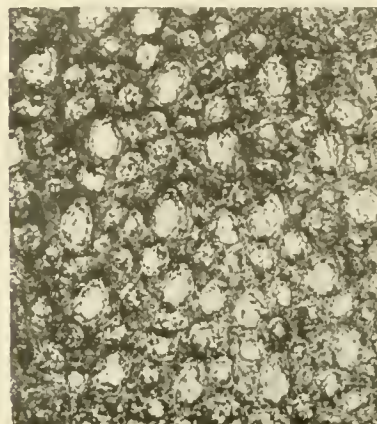
2



4 x 50



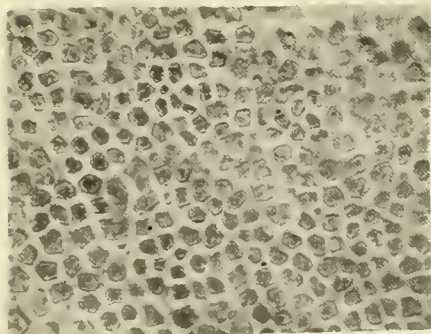
3 x 25



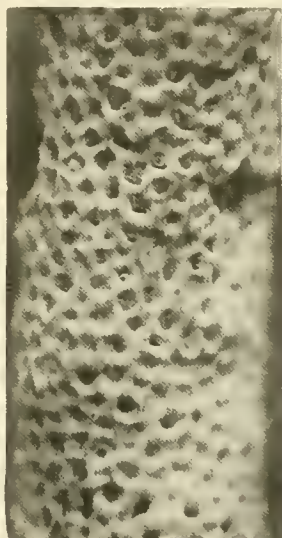
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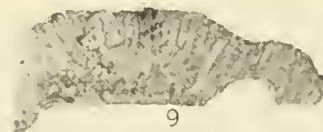
6 x 50



8 x 25



16 x 25



9



10



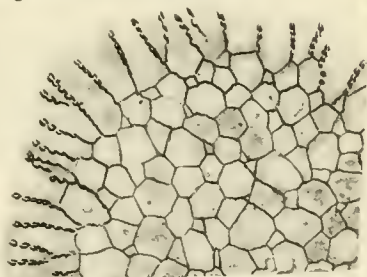
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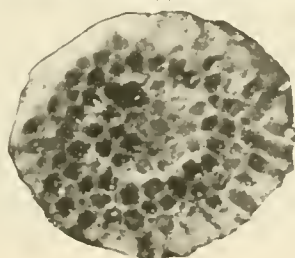
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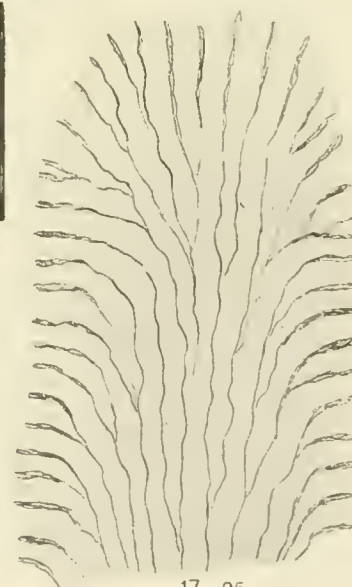
14 x 25



15



13



17 x 25



1



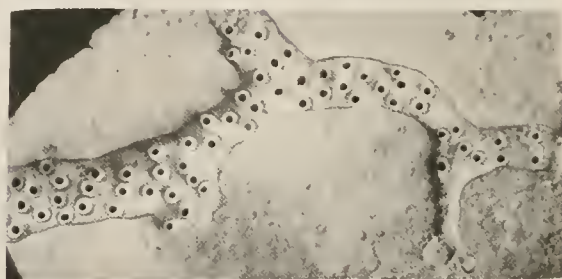
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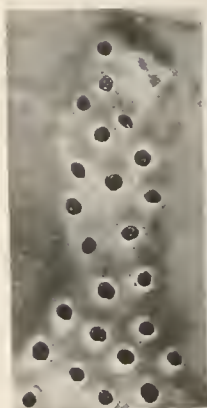
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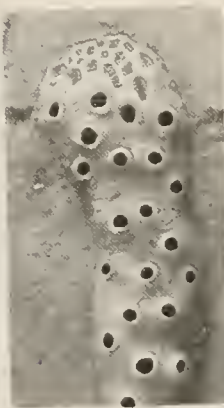
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4



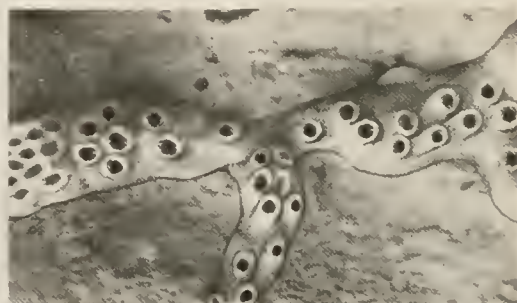
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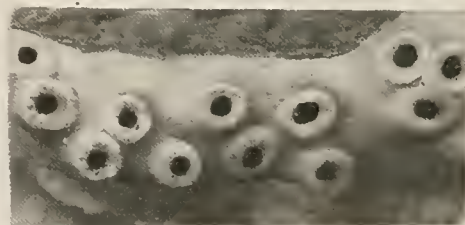
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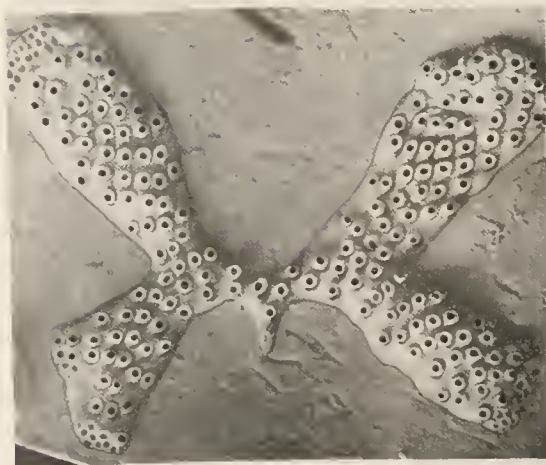
12 x25



8



9 x25



10



11

PLATE 152.

FIGS. 1, 2. *Proboscina subechinata*, new species (p. 665).

1. The incrusting type-specimen, $\times 12$.

2. Portion of the same, $\times 25$.

Vicksburgian (Marianna limestone): Claiborne, Monroe County, Alabama.

Cat. No. 65375, U.S.N.M.

FIGS. 3-7. *Proboscina rectilinea*, new species (p. 666).

3. An unsymmetrical zoarium, $\times 12$. The zooecia are arranged in transverse rows on the branch to the right and in quincunx to the left. The branches are linear.

4. Another zoarium, $\times 12$, with the two first branches not linear. A very small protoecium is developed.

5. Portion of a multiserial zoarium, $\times 25$.

6. Zooecia with the peristomes arranged in transverse irregular rows, $\times 25$.

7. Another portion of the same zoarium, $\times 25$, with the peristome arranged in quincunx.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 65376, U.S.N.M.

FIGS. 8, 9. *Proboscina cranci*, new species (p. 668).

8. An example, $\times 12$, illustrating the large although short triserial branches.

9. Part of the same specimen, $\times 25$, exhibiting the thick peristomes.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 65377, U.S.N.M.

FIGS. 10-12. *Proboscina convexius*, new species (p. 666).

10. Symmetrical zoarium with wide, symmetrically arranged branches, $\times 12$. The protoecium is probably very minute.

11. Another zoarium, $\times 12$, showing club-shaped branches.

12. Portion of a branch, $\times 25$, illustrating the thickness of the peristomes.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 65378, U.S.N.M.

PLATE 153.

FIGS. 1, 2. *Proboscina clavatiframosa*, new species (p. 667).

1. A zoarium, $\times 12$, showing the characteristic club-shaped branches unsymmetrically arranged.
2. One of the branches, $\times 25$. The peristomes are salient but the tubes are scarcely distinct.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 65379, U.S.N.M.

FIGS. 3, 4. *Diastopora magnipora*, new species (p. 674).

3. The unilamellar, flabellate zoarium, $\times 12$.
4. Portion, $\times 25$. The large tubes and thick peristomes are evident.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 65380, U.S.N.M.

FIGS. 5-8. *Diaperoccia rugosa*, new species (p. 743).

5. Complete example of the incrusting zoarium with its bilamellar expansions, $\times 5$.
6. Portion of the same specimen, $\times 12$. One of the bilamellar expansions, broken, is seen at the upper left-hand corner.
7. A further enlargement, $\times 25$, illustrating the transverse wrinkles.
8. Portion with the ovicell, $\times 12$. The ovicell is wrinkled like the tubes.

Vicksburgian: Three miles southeast of Vicksburg, Jasper County, Mississippi.

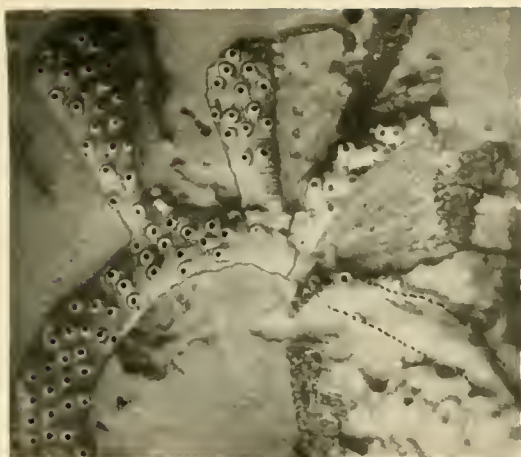
Cat. No. 65381, U.S.N.M.

FIGS. 9-15. *Diaperoccia orbiculata*, new species (p. 744).

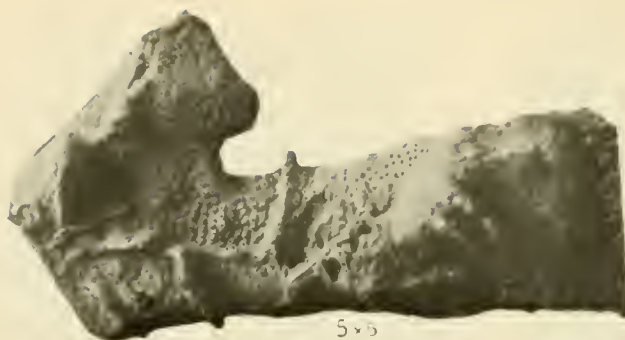
9. Specimens of the free orbicular zoarium, natural size.
10. Specimen with a smooth, unusual ovicell, $\times 12$.
- 11, 12. Two fragments, $\times 12$, showing the ovicell developed at different places on the zoarium.
13. Zoarium folded around an alga, $\times 12$.
14. Lower face of zoarium, $\times 12$, showing the concentric wrinkles of the basal lamella.
15. The tubes, $\times 25$, showing arrangement in quincunx.

Vicksburgian: One mile north of Monroeville, Alabama.

Cat. No. 65382, U.S.N.M.



1



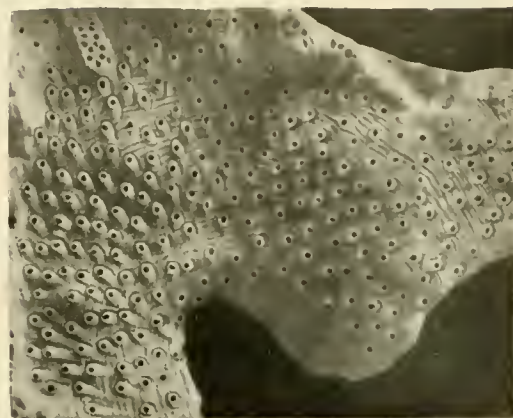
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2x25



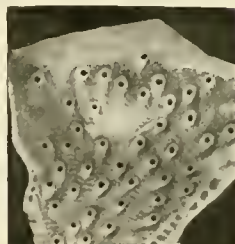
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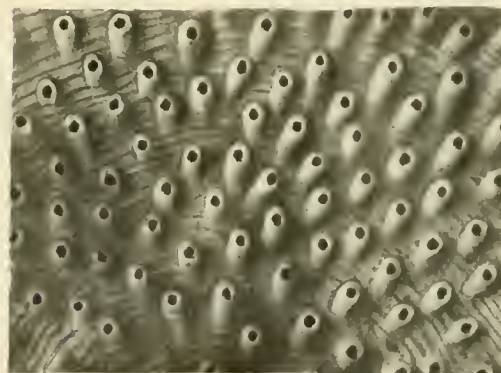
4x25



9



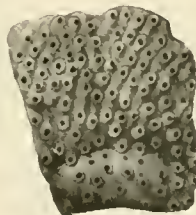
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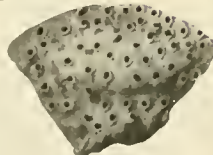
7x25



10



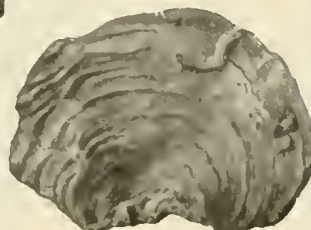
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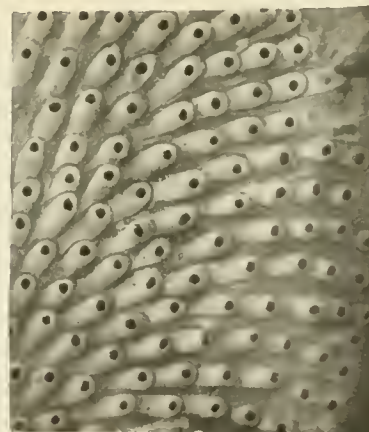
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13

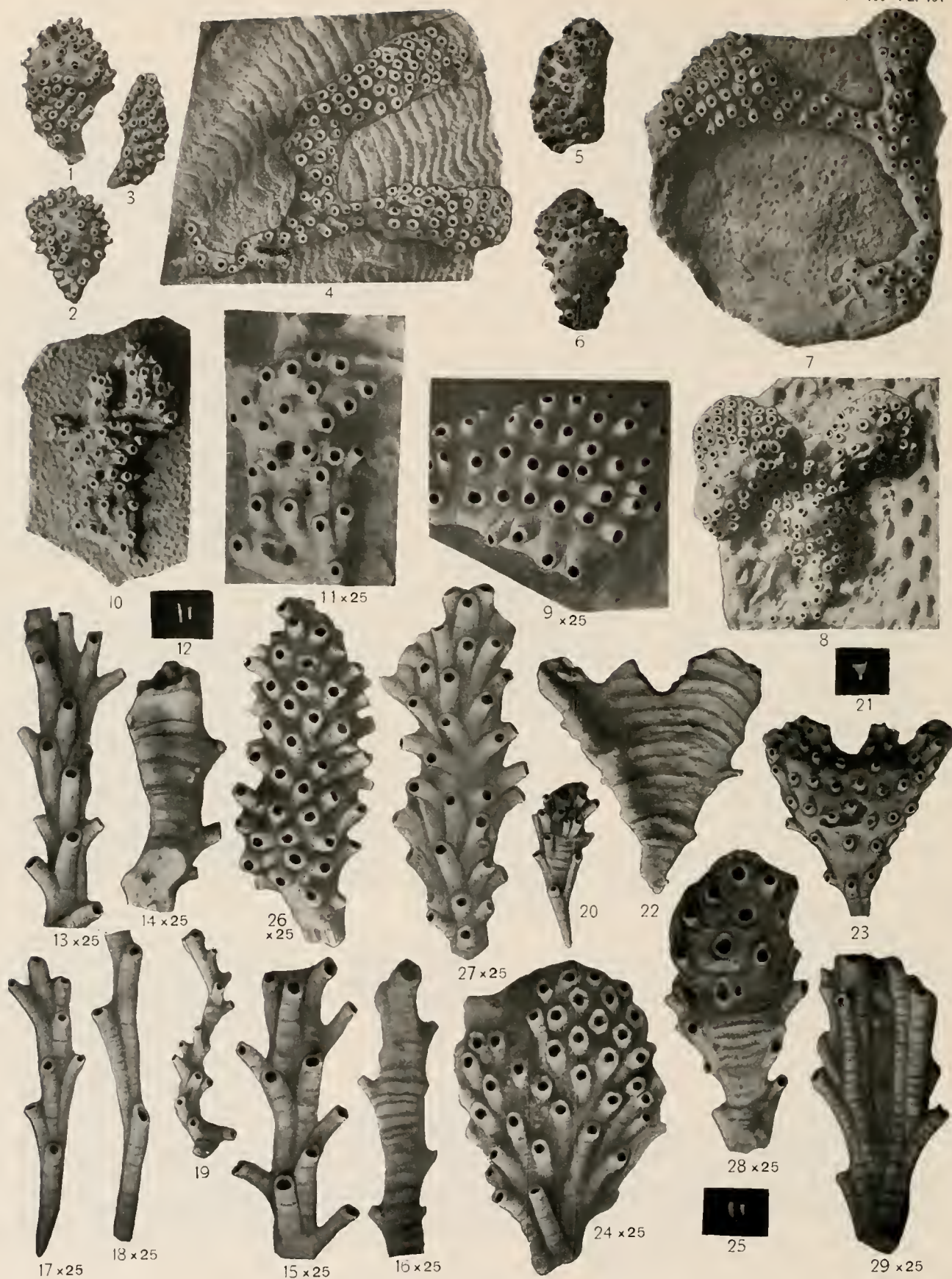


14



15x25

VICKSBURGIAN CYCLOSTOMATOUS BRYOZOA.



VICKSBURGIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 154.

Figs. 1-9. *Diaperoccia clara*, new species (p. 744).

1-3. Unilamellar zoaria, $\times 12$, creeping over algae.

4. Zoarium, $\times 12$, incrusting a shell. The more elongated branches are less claviform. The ancestrula is visible.

Vicksburgian: West bank Conecuh River, Escambia County, Alabama.

Cat. No. 65383, U.S.N.M.

5, 6. Unilamellar zoaria growing around algae, $\times 12$.

7. Zoarium, $\times 12$, incrusting an Orbitoid foraminifer.

8. Ovicelled zoarium incrusting a bryozoan, $\times 12$.

9. Branch of the same specimen, $\times 25$.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 65384, U.S.N.M.

Figs. 10, 11. *Diaperoccia walcotti*, new species (p. 745).

The incrusting zoarium, $\times 12$, and a portion, $\times 25$, showing an ovicell in the center with the oeciostome adjacent to a normal tube.

Vicksburgian: West bank Conecuh River, Escambia County, Alabama.

Cat. No. 65385, U.S.N.M.

Figs. 12-20. *Crisulipora prominens*, new species (p. 749).

12. Segments of the zoarium, natural size.

13, 15. Two normal triserial segments, $\times 25$.

14, 16. Wrinkled dorsal face of two normal segments, $\times 25$.

17, 18. Two segments from the basal part of the zoarium, $\times 25$.

19. Another segment, $\times 12$.

20. Ovicelled segment, $\times 12$, with the oeciostome tube smaller than the ordinary ones.

Vicksburgian: One mile north of Monroeville (figs. 13, 14, 16, 20), and west bank Conecuh River, Escambia County, Alabama (figs. 15, 17, 18, 19).

Cat. Nos. 65386, 65387, U.S.N.M.

Figs. 21-24. *Crisulipora glabellata*, new species (p. 750).

21. Segment, natural size.

22. Posterior face of a bifurcated segment, $\times 12$.

23. Celluliferous side of the same segment, $\times 12$, showing ovicell.

24. Another segment, $\times 25$.

Vicksburgian: One mile north of Monroeville, Alabama, and Murder Creek, east of Castlebury, Alabama (fig. 24).

Cat. No. 65483, 65388, U.S.N.M.

Figs. 25-29. *Crisulipora rugosodorsalis*, new species (p. 749).

25. Two segments, natural size.

26. Segment, $\times 25$, with the peristomie little developed.

27. Segment, $\times 25$, with long peristomie.

28. Ovicelled segment, $\times 25$. The oeciostome is the smaller tube next one of ordinary size.

29. Posterior or dorsal face, $\times 25$, ornamented with large transverse wrinkles.

Vicksburgian: One mile north of Monroeville (fig. 27), and west bank Conecuh River, Escambia County, Alabama (figs. 25, 26, 28, 29).

Cat. No. 65389, 65390, U.S.N.M.

PLATE 155.

FIGS. 1-6. *Desmoplagioccia tenuis* Reuss, 1869 (p. 721).

1. The free discoidal zoarium, natural size.
 - 2, 3. Cellular or anterior side of two zoaria, $\times 6$.
 4. Posterior side, $\times 6$.
 5. A large ovicelled zoarium, $\times 6$.
 6. Surface of a zoarium, $\times 25$.
- Vicksburgian (Marianna limestone): One mile north of Monroeville, Alabama.
Cat. No. 65459, U.S.N.M.

FIGS. 7-11. *Crisulipora grandipora*, new species (p. 750).

7. Basal segments of the species, natural size.
 8. Posterior face, $\times 25$.
 9. Anterior face, $\times 25$.
 10. Longitudinal thin section showing the great length of the tubes, $\times 12$.
 11. Longitudinal thin section showing the growth of a new tube, $\times 12$.
- Vicksburgian (Marianna limestone): West bank Conecuh River, Escambia County, Alabama.
Cat. No. 65460, U.S.N.M.

FIGS. 12-17. *Plagioccia discoides*, new species (p. 717).

12. The free orbicular zoarium, natural size.
 - 13, 14. Anterior face of a large and a small zoarium, $\times 12$.
 15. Lower face showing the concentric wrinkles of the basal lamella, $\times 12$.
 16. View of the basal lamella after ablation, showing the lozenge-shaped areas formed by the horizontal projection of the tubes in juxtaposition, $\times 25$.
 17. Median thin section, $\times 25$.
- Vicksburgian (Marianna limestone): One mile north of Monroeville, Alabama.
Cat. No. 65461, U.S.N.M.

FIGS. 18-22. *Mecynoccia compressa*, new species (p. 729).

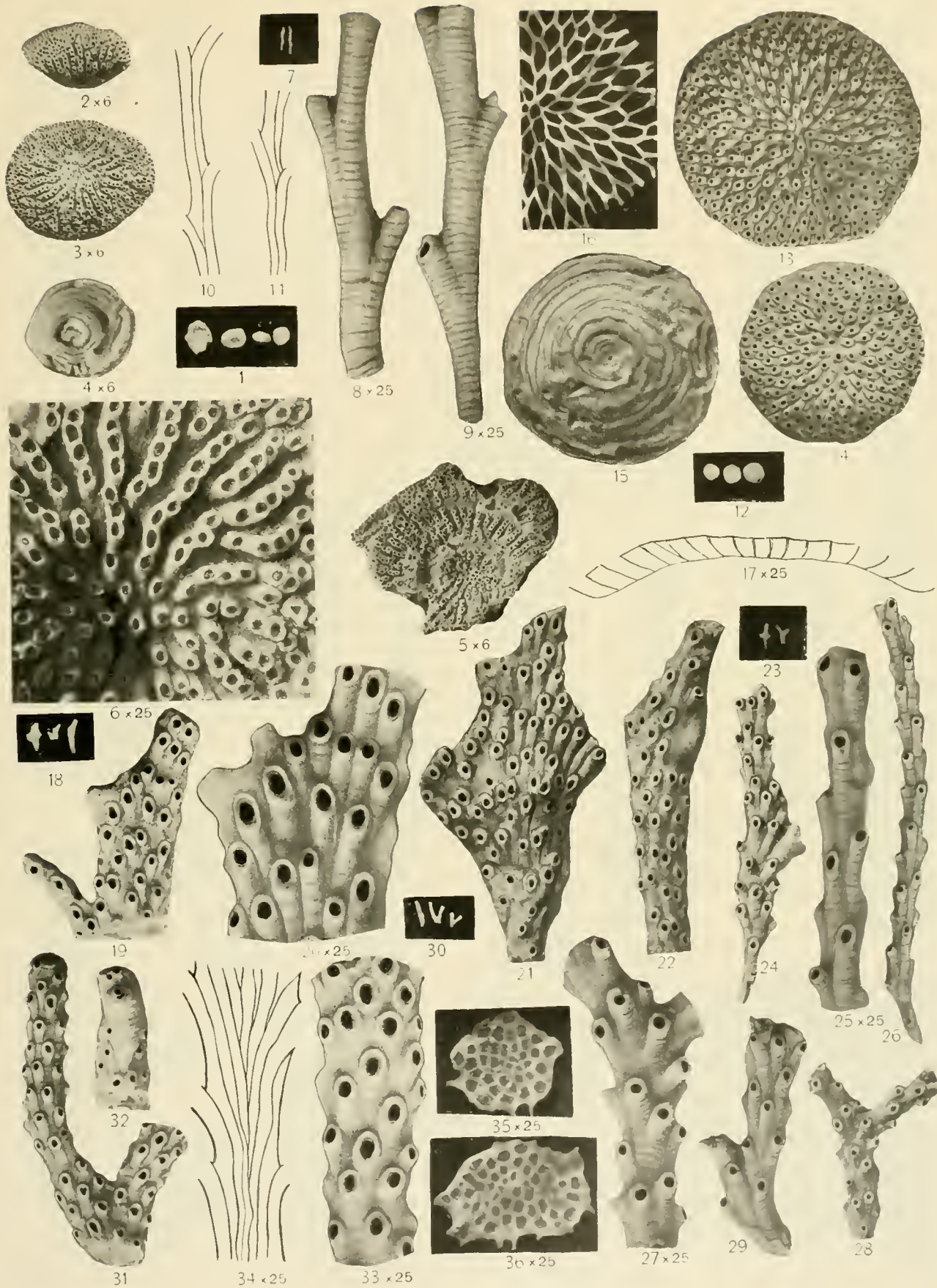
18. The flattened zoarial branches, natural size.
 - 19, 20. Lamellar specimen emitting a cylindrical branch, $\times 12$, and a portion, $\times 25$.
 21. Lamellar specimen irregularly branched and subcylindrical at the base, $\times 12$.
 22. Ovicelled example, $\times 12$, with the oeciostome little salient.
- Vicksburgian (Marianna limestone): One mile north of Monroeville, Alabama.
Cat. No. 65462, U.S.N.M.

FIGS. 23-29. *Mecynoccia elongatotuba*, new species (p. 732).

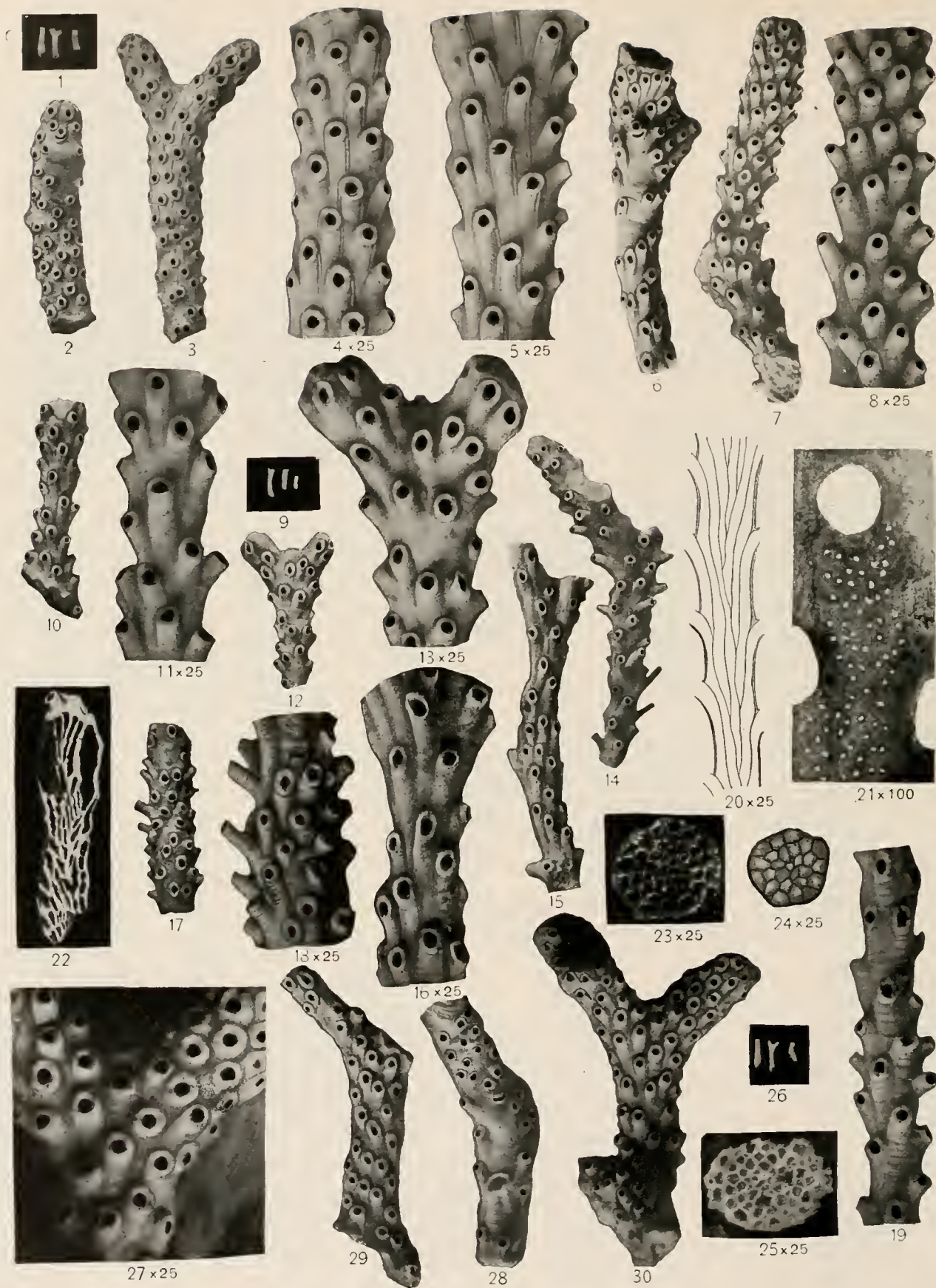
23. The small bifurcated branches, natural size.
 24. A claviform fragment showing the curious mode of branching, $\times 12$.
 - 25, 26. A slender, long branch with striated tubes, $\times 25$ and $\times 12$.
 - 27, 28. The most frequent aspect of the species, $\times 25$ and $\times 12$.
 29. A claviform branching fragment, $\times 12$.
- Vicksburgian (Red Bluff clay): Seven and one-half miles southwest of Bladen Springs, Alabama.
Cat. No. 65463, U.S.N.M.

FIGS. 30-36. *Mecynoccia cornuta*, new species (p. 733).

30. The cylindrical bifurcated branches, natural size.
 31. Normal bifurcated specimen, $\times 12$, showing the club-shaped tubes.
 32. Fragment, $\times 12$, exhibiting the elongate ovicell.
 33. Surface of branch, $\times 25$.
 34. Longitudinal thin section, $\times 25$.
 35. Transverse section through a branch, $\times 25$.
 36. Transverse section taken just before a bifurcation, $\times 25$.
- Vicksburgian (Marianna limestone): One mile north of Monroeville, Alabama.
Cat. No. 65464, U.S.N.M.



VICKSBURGIAN CYCLOSTOMATOUS BRYOZOA.



VICKSBURGIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 156.

FIGS. 1-8. *Mecynoccia lunata*, new species (p. 730).

1. Fragments of the solid, cylindrical zoarium, natural size.
2. Branch with ovicell, $\times 12$. The oeciostome is in the form of a lunar crescent.
3. Branch with ordinary tubes, $\times 12$; they are bordered by a salient thread. The zone of growth is visible.
- 4, 5. Ordinary tubes bordered by a salient thread, $\times 25$.
Vicksburgian: West bank Conecuh River, Escambia County, Alabama.
Cat. No. 65391, U.S.N.M.
6. Slender ovicelled branch, $\times 12$.
Vicksburgian: Murder Creek, east of Castlebury, Conecuh County, Alabama.
Cat. No. 65392, U.S.N.M.
- 7, 8. Young tubes not bordered by a thread, $\times 12$ and $\times 25$. The base is discoidal.
Vicksburgian: Near Claiborne, Monroe County, Alabama.
Cat. No. 65393, U.S.N.M.

FIGS. 9-25. *Mecynoccia semata*, new species (p. 731).

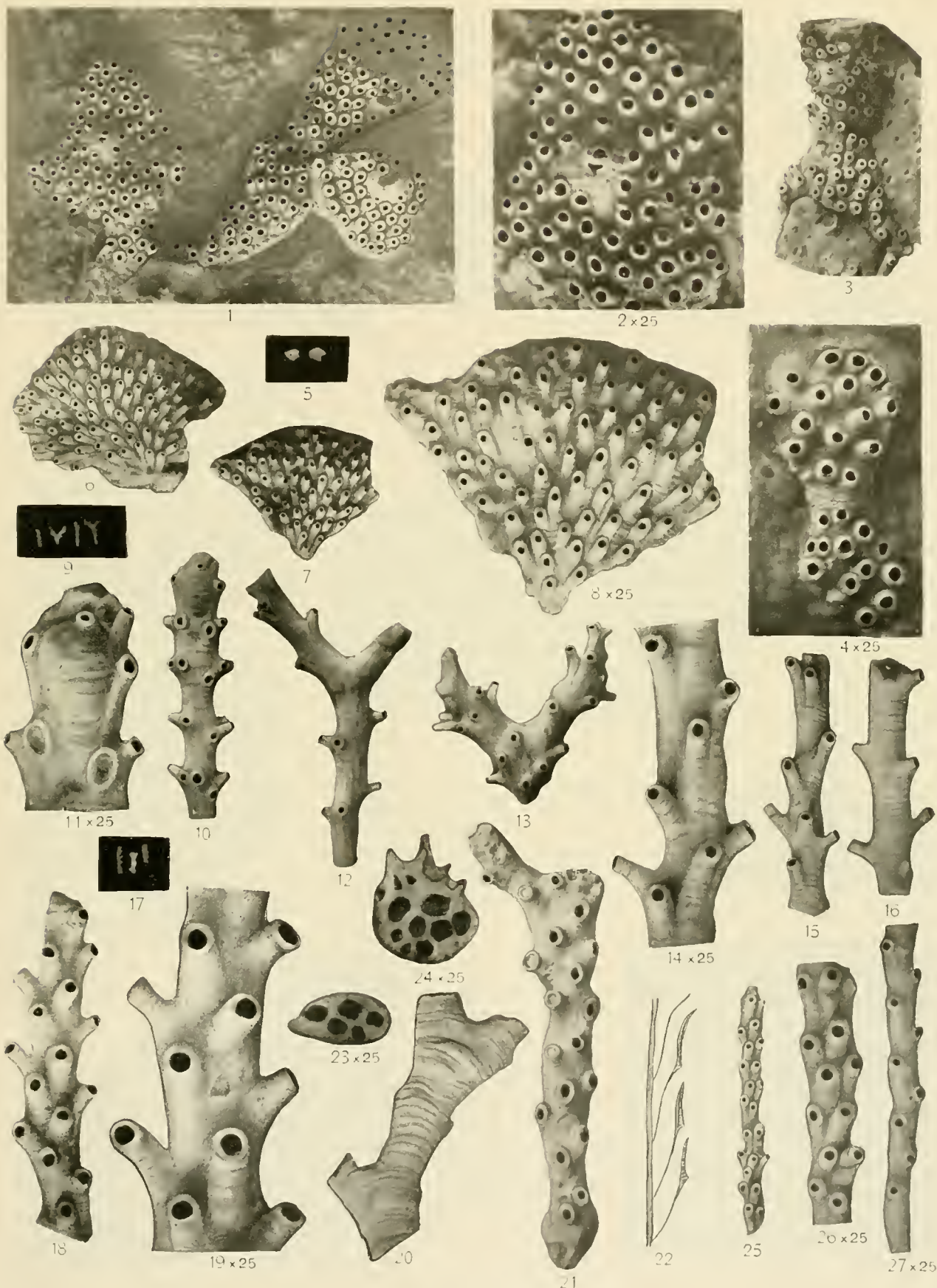
9. Fragments, natural size.
- 10, 11. Specimen with salient peristome, $\times 12$ and $\times 25$. The distance between the peristomes is quite variable.
- 12, 13. Branch, $\times 12$ and $\times 25$. The zone of growth is very small. The tubes are striated transversely.
14. Specimen with long, very salient peristomie, $\times 12$.
Vicksburgian: West bank Conecuh River, Escambia County, Alabama.
Cat. No. 65394, U.S.N.M.
- 15, 16. Branch, $\times 12$ and $\times 25$ with separation of the peristomes less developed.
- 17, 18. Fragment, $\times 12$ and $\times 25$, with long peristomie.
19. Fragment, $\times 12$, in a portion of which the distance between the peristomes is smaller.
20. Longitudinal section, $\times 25$.
21. Tangential section, $\times 100$, showing the usual structure of the zooecial walls.
22. Longitudinal section through an ovicell, $\times 12$.
23. Transverse section somewhat above a bifurcation, $\times 25$.
24. Transverse section in a more slender branch, $\times 25$.
25. Normal transverse section, $\times 25$.
Vicksburgian: One mile north of Monroeville, Alabama.
Cat. No. 65395, U.S.N.M.

FIGS. 26-30. *Mecynoccia quiscuberryae*, new species (p. 730).

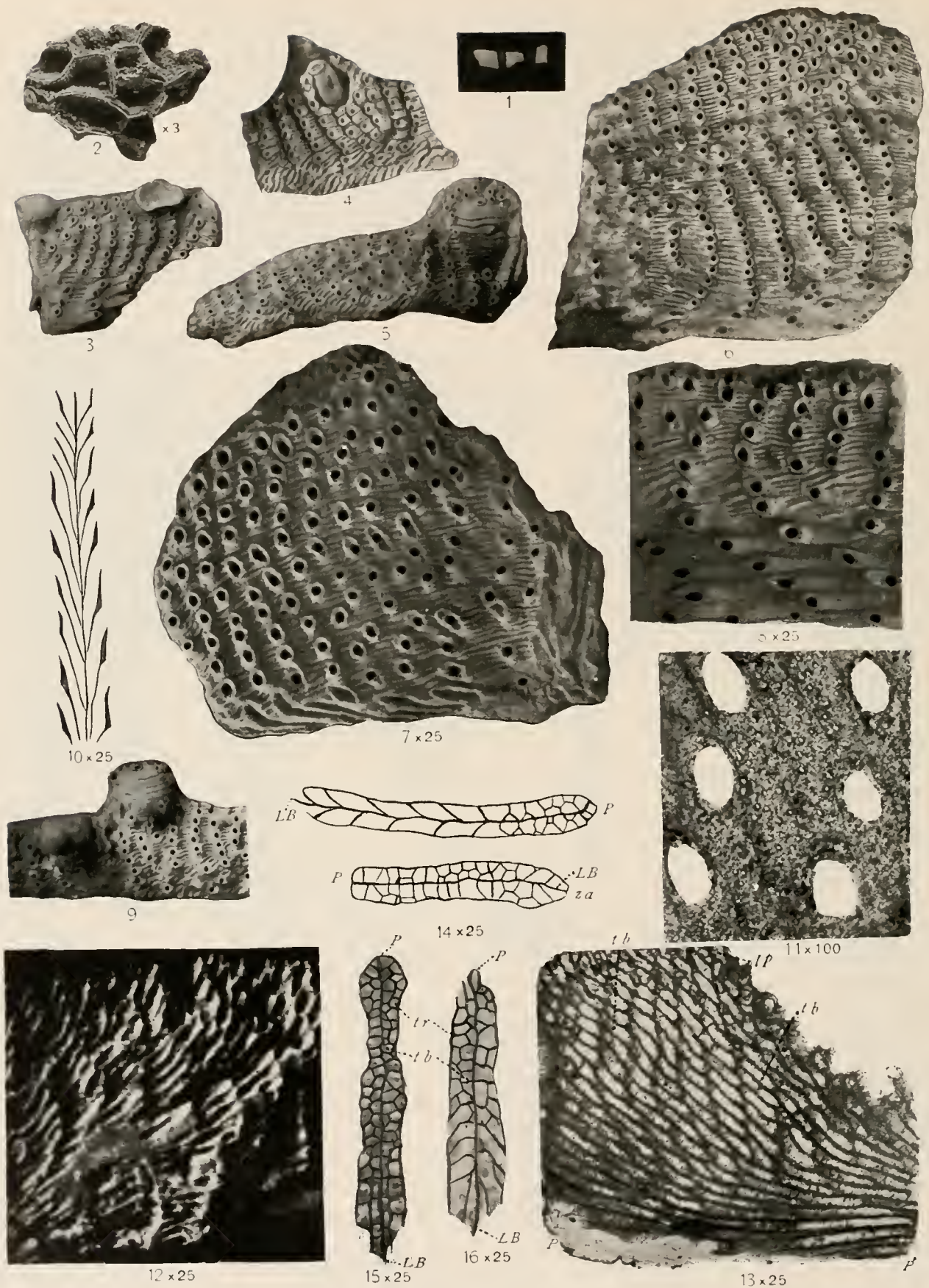
26. Zoarial fragments, natural size.
27. Specimen, $\times 12$, with peristomes arranged in oblique verticells.
28. Branch with ovicell, $\times 12$.
- 29, 30. Fragment, $\times 25$ and $\times 12$, showing peristomes in quincunx.
Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.
Cat. No. 65396, U.S.N.M.

PLATE 157.

- FIGS. 1, 2. *Mecynocella lobata*, new species (p. 734).
 1. The incrusting *Proboscina* zoarium, $\times 12$, with ovicelled lobes.
 2. Enlarged portion of the same zoarium, $\times 25$. The oeciostome is broken.
 Vicksburgian: Near Claiborne, Monroe County, Alabama.
 Cat. No. 65397, U.S.N.M.
- FIGS. 3, 4. *Mecynocella globula*, new species (p. 734).
 3. The incrusting zoarium, $\times 12$, showing the globular ovicell.
 4. Portion of a zoarium, $\times 25$.
 Vicksburgian: One mile north of Monroeville, Alabama.
 Cat. No. 65398, U.S.N.M.
- FIGS. 5-8. *Microcella hirta*, new species (p. 736).
 5. Fragments of the free unilamellar zoarium, natural size.
 6, 7. The same specimens, $\times 12$.
 8. The fragment shown in figure 7, $\times 25$, exhibiting the small ovicell.
 Vicksburgian: West bank Conecuh River, Escambia County, Alabama.
 Cat. No. 65399, U.S.N.M.
- FIGS. 9-16. *Oncosocella quinquesciata*, new species (p. 692).
 9. The small bifurcated branches, natural size.
 10, 11. Normal ovicelled branch, $\times 12$ and $\times 25$. The fifth longitudinal row of zooecia is rarely visible on photographs because of the convexity of the branch.
 12. Dorsal of branch, $\times 12$, with the longitudinal tubes visible.
 13. Bifurcated example, $\times 12$, with dissimilar branches.
 14. A normal branch, $\times 25$.
 Vicksburgian: One mile north of Monroeville, Alabama.
 Cat. No. 65400, U.S.N.M.
15. Young branch, $\times 12$.
 16. Dorsal of branch, $\times 12$, with transverse striations.
 Vicksburgian: West bank of Conecuh River, Escambia County, Alabama.
 Cat. No. 65401, U.S.N.M.
- FIGS. 17-24. *Oncosocella varians* Reuss, 1869 (p. 690).
 17. Zoarial fragments, natural size.
 18, 19. Branch with long peristomes, $\times 12$ and $\times 25$.
 20. Dorsal of branch, $\times 12$, much wrinkled transversely.
 21. Branch, $\times 12$, with very short peristome. Some of the tubes are closed by a calcareous lamella.
 22. Longitudinal thin section, $\times 12$.
 23. Transverse section of an ordinary branch between the peristomes.
 24. Transverse section of a branch with very convex dorsal, $\times 25$.
 Vicksburgian: West bank Conecuh River, Escambia County, Alabama.
 Cat. No. 65402, U.S.N.M.
- FIGS. 25, 26. *Filisparsa atomacula*, new species (p. 697).
 25, 26. Fragment of the minute zoarium, $\times 12$ and $\times 25$.
 Vicksburgian: One mile north of Monroeville, Alabama.
 Cat. No. 65403, U.S.N.M.
- FIG. 27. *Filisparsa biseriata*, new species (p. 702).
 The thin rectilinear biserial zoarium, $\times 25$; with indistinct tubes.
 Vicksburgian: West bank Conecuh River, Escambia County, Alabama.
 Cat. No. 65404, U.S.N.M.



VICKSBURGIAN CYCLOSTOMATOUS BRYOZOA.



VICKSBURGIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 158.

FIGS. 1-16. *Eraichocia rugosa*, new species (p. 737).

1. Fragments of the zoarium, natural size, as usually found.
2. Upper face of a reticulate and meandriform zoarium, $\times 3$. The small compartments act as traps for diatoms.
3. Zoarium in which the ovicells are not bordered by the zone of growth.
4. Fragment, $\times 12$, showing interior of an ovicell. The adjacent tubes are arrested in their development.
5. Ovicelled frond, $\times 12$. The ovicell is bordered distally by the zone of growth. The oostome is smaller than a tube.
6. Frond, $\times 12$, in which the direction of the tubes has changed following a change in the zone of growth.
7. A very rugose frond, $\times 25$. The zone of growth is broken.
8. Fragment, $\times 25$, showing that the tubes begin parallel with the folding but their branches are more and more diverging. The zone of growth is quite visible.
9. Specimen, $\times 12$, with two ovicells. The position of the ovicell on the zone of growth is variable.
10. Longitudinal section across the lines, $\times 25$.
11. Tangential thin section, $\times 100$. The elements are very large, but the structure of the tubes is identical with that of other Cyclostomata.
12. Interior obtained by ablation of a lamella, $\times 25$. The lines of the peristomes are not in the axis of the tubes which support them; the latter (which appear in lozenge-shape) are the branchings of the tubes which are contiguous to the basal lamella.
13. Tangential section of a lamella, $\times 25$.
PP'=fold; *tb*, tubes developed on the basal lamella and continuing almost to the zone of growth. Their branches form the rows which are thus the remains of the lines of peristomes (*lp*).
14. Transverse thin section, $\times 25$, perpendicular to the zone of growth and cutting only the tubes arranged on the basal lamella. LB=Basal lamella; P=fold; *za*, zone of growth.
- 15, 16. Transverse sections showing the tubes (*tb*) adjacent to the basal lamella (*LB*) and their ramifications opening on the zoarial surface and forming the peristomial lines (*tr*).

Vicksburgian (Marianna limestone); One mile north of Monroeville, Alabama.

Cat. No. 65405, U.S.N.M.

PLATE 159.

FIGS. 1-7. *Filisparsa bini*, new species (p. 695).

1. Fragments, natural size.
- 2, 3. Ramified branch, $\times 12$, and $\times 25$.
4. Normal branch, $\times 12$, showing tubes grouped in pairs.
Vicksburgian: Seven and one-half miles southeast of Bladon Springs, Alabama.
Cat. No. 65406, U.S.N.M.
- 5, 6. Branch little sinuous, $\times 12$ and $\times 25$. The tubes are grouped in pairs, but the peristomes are not adjacent.
7. Undulated branch, $\times 12$, seen from its posterior or dorsal face.
Vicksburgian (Marianna limestone): One mile north of Monroeville, Alabama.
Cat. No. 65407, U.S.N.M.

FIGS. 8-11. *Filisparsa gracilis*, new species (p. 695).

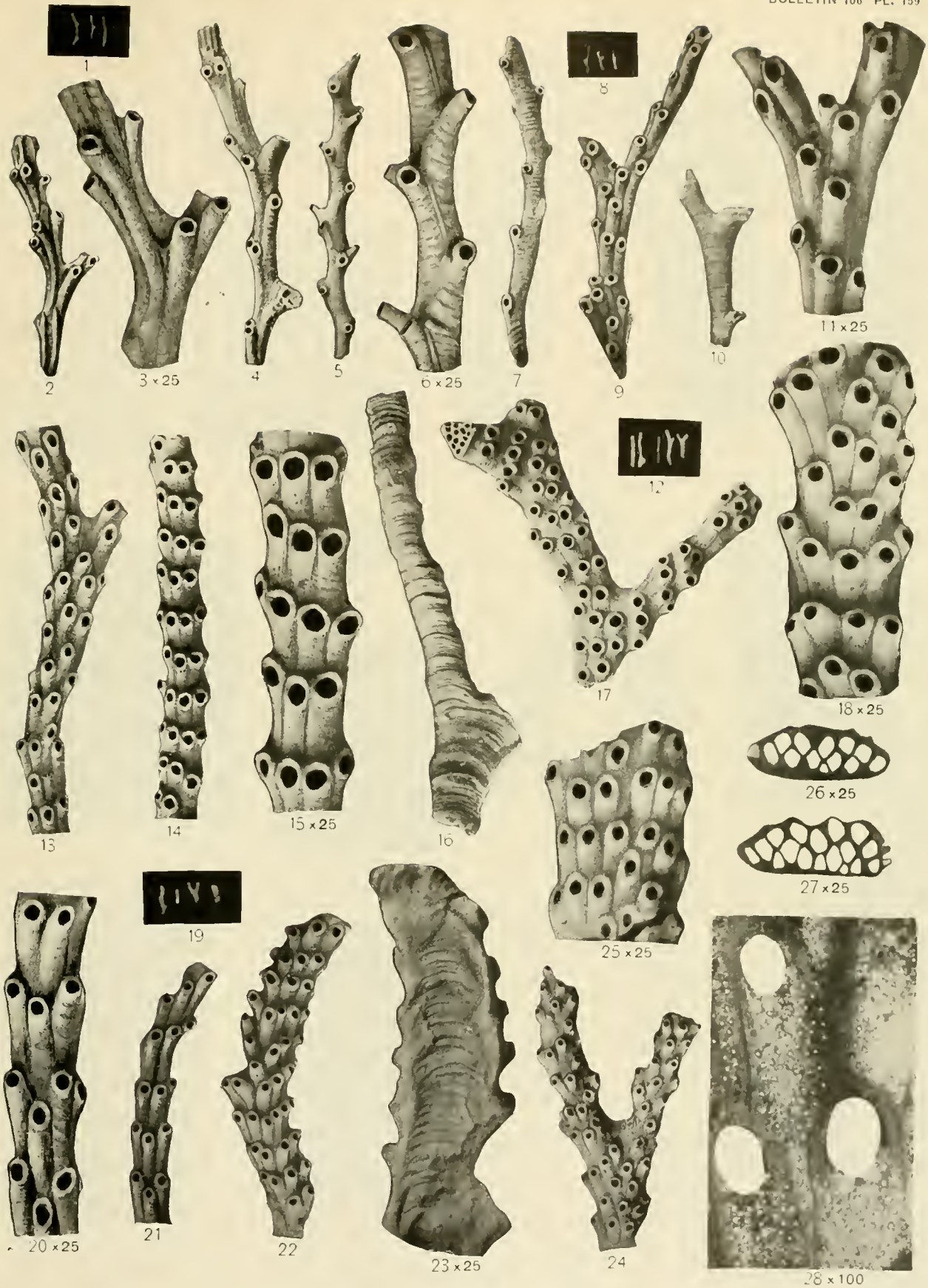
8. Zoarial fragments, natural size.
- 9, 11. Rectilinear branch, $\times 12$, and a portion, $\times 25$. The angle of bifurcation is very acute.
10. Dorsal surface, $\times 12$.
Vicksburgian (Red Bluff clay): Seven and one-half miles southeast of Bladon Springs, Alabama.
Cat. No. 65408, U.S.N.M.

FIGS. 12-18. *Filisparsa typica* Manzoni, 1877 (p. 696).

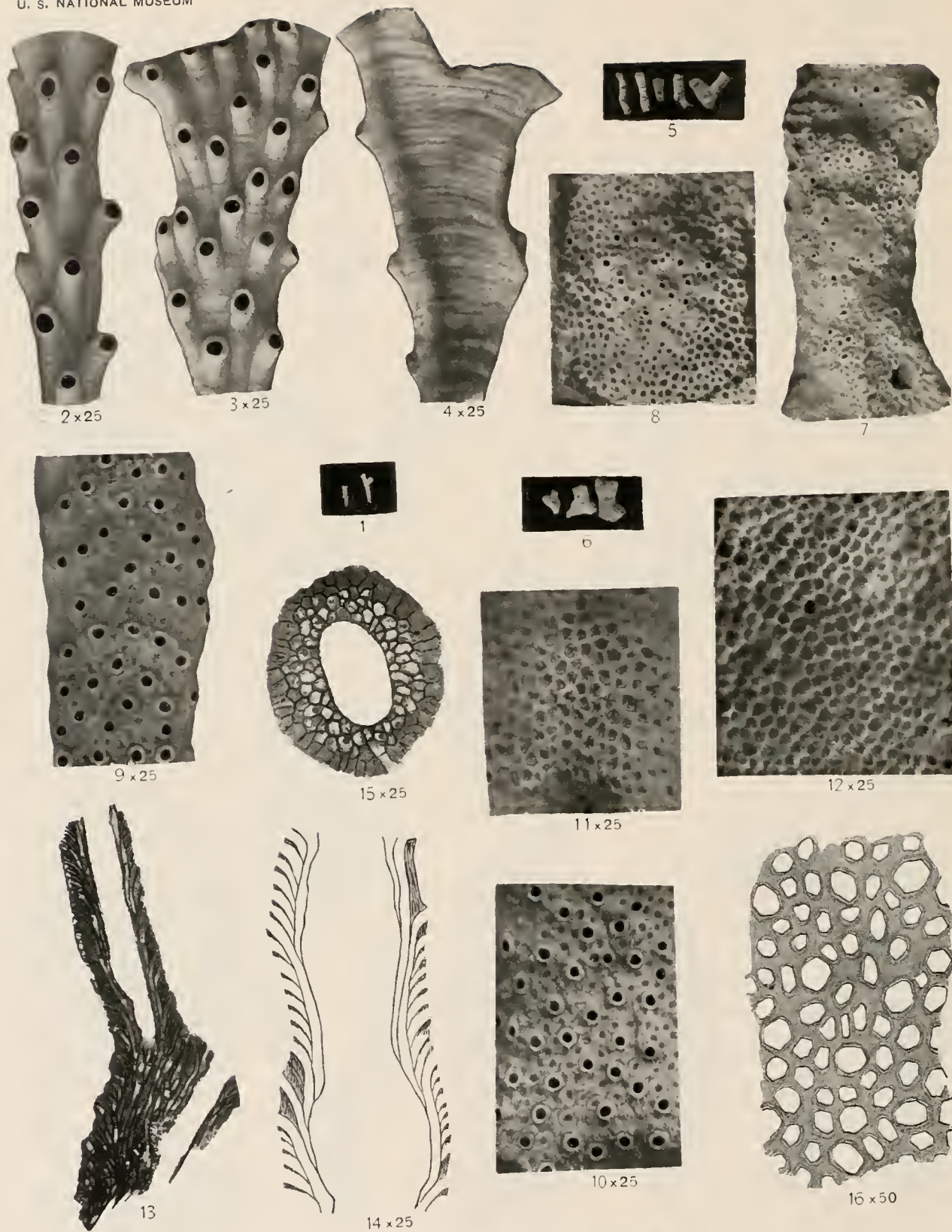
12. Fragments, natural size.
13. Branch, $\times 12$, with tubes arranged in quincunx.
- 14, 15. Branch, $\times 12$ and $\times 25$, in which the tubes are arranged in transverse rows. The peristomes are adjacent by rupture of the peristomie.
16. Posterior side of branch, $\times 12$.
- 17, 18. Branch, $\times 12$ and $\times 25$, showing tubes arranged in transverse rows: the peristomes are not adjacent on account of the development of the peristomie. The zone of growth (triangular) is visible.
Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, and west bank Conecuh River, Escambia County, Alabama.
Cat. Nos. 65485, 65409, U.S.N.M.

FIGS. 19-28. *Filisparsa simulator*, new species (p. 697).

19. Fragment of the compressed rectilinear branches, natural size.
- 20, 21. Branch, $\times 25$ and $\times 12$, with tubes arranged in verticells.
22. Another branch, $\times 12$. The tubes are arranged in oblique rows.
23. Posterior or dorsal face, $\times 25$. This is concave below and convex above.
24. Branching fragment, $\times 12$, with tubes arranged in quincunx.
25. Portion of a branch, $\times 25$, with transverse rows of tubes.
- 26, 27. Normal transverse sections, $\times 25$.
28. Tangential thin section, $\times 100$. The tremopores are very small.
Vicksburgian: One mile north of Monroeville, Alabama.
Cat. No. 65410, U.S.N.M.



VICKSBURGIAN CYCLOSTOMATOUS BRYOZOA.



VICKSBURGIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 160.

FIGS. 1-4. *Filisarsa larata*, new species (p. 697).

1. Zoarial fragments, natural size.

2. Claviform branch, $\times 25$.

Vicksburgian (Marianna limestone): West bank Conecuh River, Escambia County, Alabama.

Cat. No. 65411, U.S.N.M.

3. Claviform branch, $\times 25$, much enlarged at the bifurcation.

4. Dorsal of the same specimen, $\times 25$.

Vicksburgian (Marianna limestone): Murder Creek, East of Castlebury, Conecuh County, Alabama.

Cat. No. 65412, U.S.N.M.

FIGS. 5-16. *Partricycloccia exilis*, new species (p. 834).

5. 6. Two groups of fragments of the hollow zoarium, natural size.

7. Small ovicelled specimen, $\times 12$. The ovicell is pierced by the tubes accompanied by mesopores.

8. Ovicell of a large specimen, $\times 12$.

9. Surface of a branch, $\times 25$, in which the peristomes are salient, and the mesopores are small.

10. Another branch, $\times 25$, with somewhat larger mesopores.

11. Another branch, $\times 25$. At the bifurcation, there are mesopores only.

12. A superior lunella of a branch with polygonal mesopores, $\times 25$.

13. Longitudinal thin section, $\times 12$, in a specimen alternately hollow and solid. The mesopores are very long at the bifurcations.

14. Longitudinal thin section, $\times 25$. The mesopores are distributed over almost the whole length of the tube.

15. Transverse thin section, $\times 25$, showing the large central cavity.

16. Tangential thin section, $\times 50$.

Vicksburgian (Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 65413, U.S.N.M.

PLATE 161.

Figs. 1, 2. *Platonea clarata*, new species (p. 760).

1. Ovicelled branch, $\times 12$.

2. Nonovicelled branch, $\times 25$.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 65441, U.S.N.M.

Figs. 3, 4. *Pleuronea fusiformis*, new species (p. 768).

3. Anterior face, $\times 25$, exhibiting the ovicell.

4. Dorsal of the same specimen, $\times 25$, showing the fusiform turgipores.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 65442, U.S.N.M.

Figs. 5-24. *Idmonea triforata* Canu, 1911 (p. 782).

5, 6. Two groups of fragments, natural size.

7. A branch with salient fascicles, $\times 12$. An isolated axial tube occurs at the beginning of the fascicles.

8. Another branch with salient fascicles, $\times 12$.

9, 10. Dorsals of two branches, $\times 12$.

11. An irregular branch, $\times 12$.

Vicksburgian (Marianna limestone): West bank Conecuh River, Escambia County, Alabama.

Cat. No. 65443, U.S.N.M.

12, 13. An inferior branch, $\times 12$, and a portion, $\times 25$.

14, 15. Irregular branches, $\times 12$, with salient fascicles and the isolated axial zooecia at their extremity.

Vicksburgian (Marianna limestone): Murder Creek, east of Castlebury, Alabama.

Cat. No. 65444, U.S.N.M.

16. Fascicles broken and opposite, $\times 12$.

17. Dorsal, $\times 12$. The last tube of each fascicle is turned backward.

18. Lateral face of one of the lower branches, $\times 12$.

19-21. Transverse sections, $\times 25$.

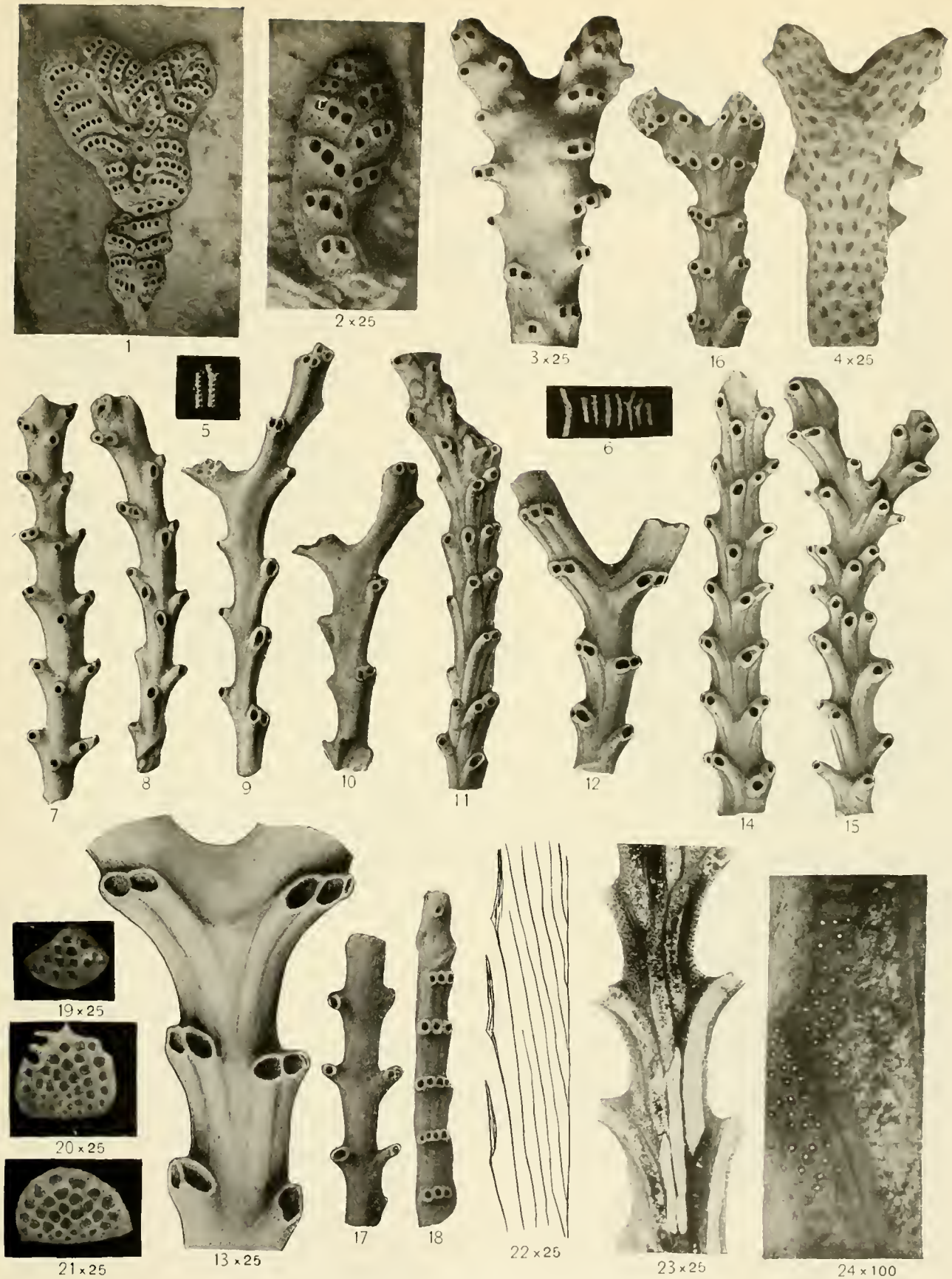
22. Median section in a lower branch without axial tube, $\times 25$.

23. Meridian section parallel to the dorsal, $\times 25$.

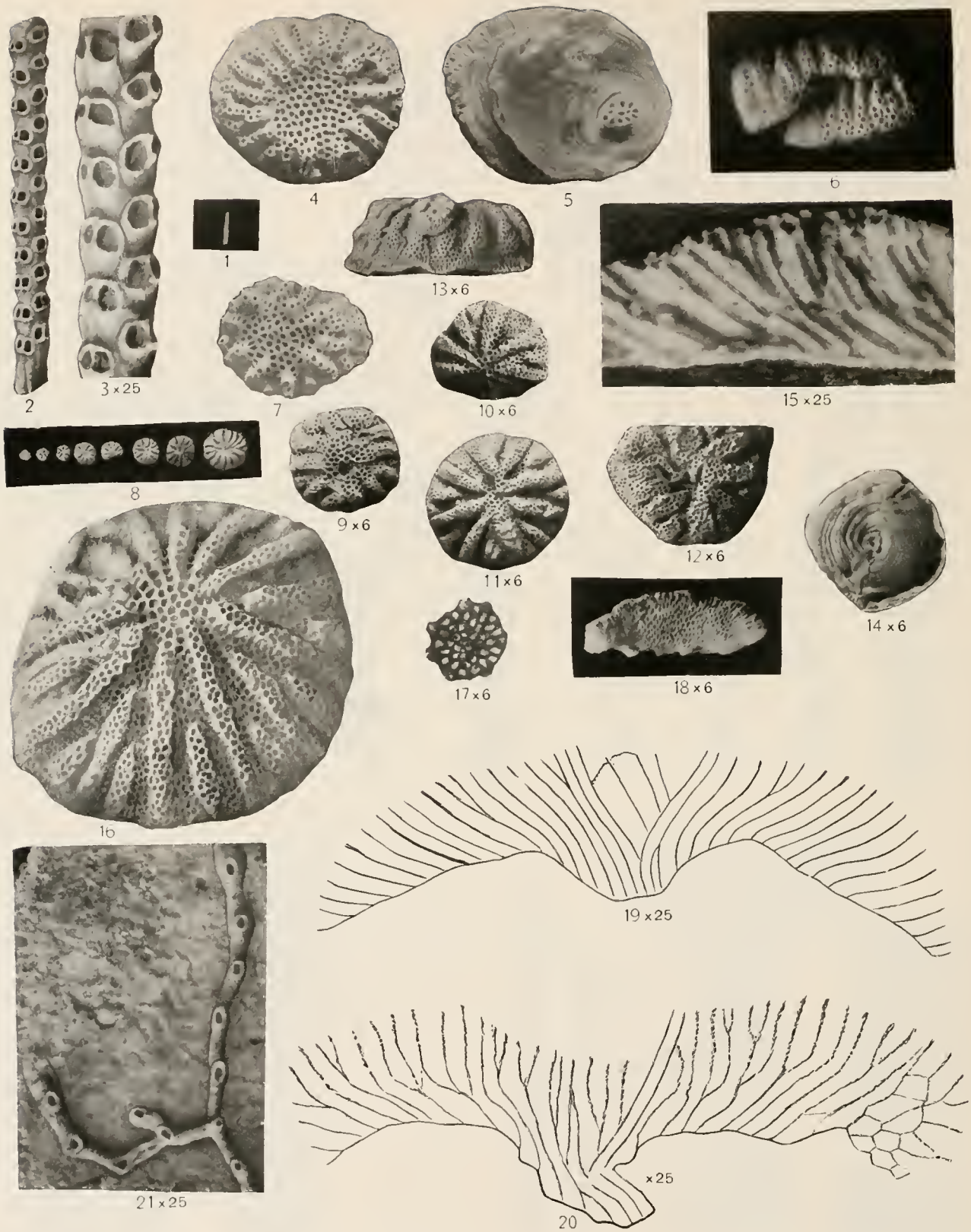
24. Thin section of the frontal, $\times 100$.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 65445, U.S.N.M.



VICKSBURGIAN CYCLOSTOMATOUS BRYOZOA.



VICKSBURGIAN CYCLOSTOMATOUS BRYOZOA.

PLATE 162.

FIGS. 1-3. *Idmonca grandiora*, new species (p. 783).

Views, natural size, $\times 12$, and $\times 25$, of the zoarium showing the large apertures.

Vicksburgian (Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 65472, U.S.N.M.

FIGS. 4-7. *Lichnopora prolifera* Reuss, 1847 (p. 820).

4. A zoarium, $\times 12$, composed of two superposed disks.

5, 6. Basal and lateral views of the same specimen, $\times 12$.

7. A simple discoid zoarium, $\times 12$.

Vicksburgian (Marianna limestone): Salt Mountain, 5 miles south of Jackson, Alabama.

Cat. No. 65473, U.S.N.M.

FIGS. 8-20. *Lichnopora goldfussi* Reuss, 1864 (p. 821).

8. A group of the simple discoidal zoaria, natural size.

9-12. Frontal views, $\times 6$, showing various aspects of the zoarium.

13. Lateral view of zoarium, $\times 6$.

14. Dorsal side, $\times 6$.

15. Median fracture, $\times 25$, showing the absence of the spinules from the cancelli.

16. Normal zoarium, $\times 12$, with a small central area and showing the most frequent aspect.

17, 18. Aspect of the zooecia on the basal lamella after its removal, $\times 6$.

19. Longitudinal (median) thin section, $\times 25$, through the fascicles. The two directing zooecia issue from the ancestrula and have a smaller diameter.

20. Another longitudinal thin section, $\times 25$. The cancelli are superposed and ramified.

Vicksburgian (Marianna limestone): One mile north of Monroeville, Alabama.

Cat. No. 65474, U.S.N.M.

FIG. 21. *Stomatopora minuta*, new species (p. 656).

The type specimen, $\times 25$.

Vicksburgian (Marianna limestone): Murder Creek, east of Castlebury, Alabama.

Cat. No. 65475, U.S.N.M.

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